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THE ECONOMICAL MANAGEMENT OF AN EFFICIENT VOLUNTARY HOSPITAL,

BEING THE

ESSAY WHICH WON THE PRIZE OF £100 AND A SILVER CUP
OFFERED BY EDGAR SPEYER, Esq.,

BY

GODFREY HEATHCOTE HAMILTON.

*Secretary of the National Hospital for the Paralysed and Epileptic,
Queen Square, W.C.*

AS WELL AS THE

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ERNEST WILLIAM MORRIS,

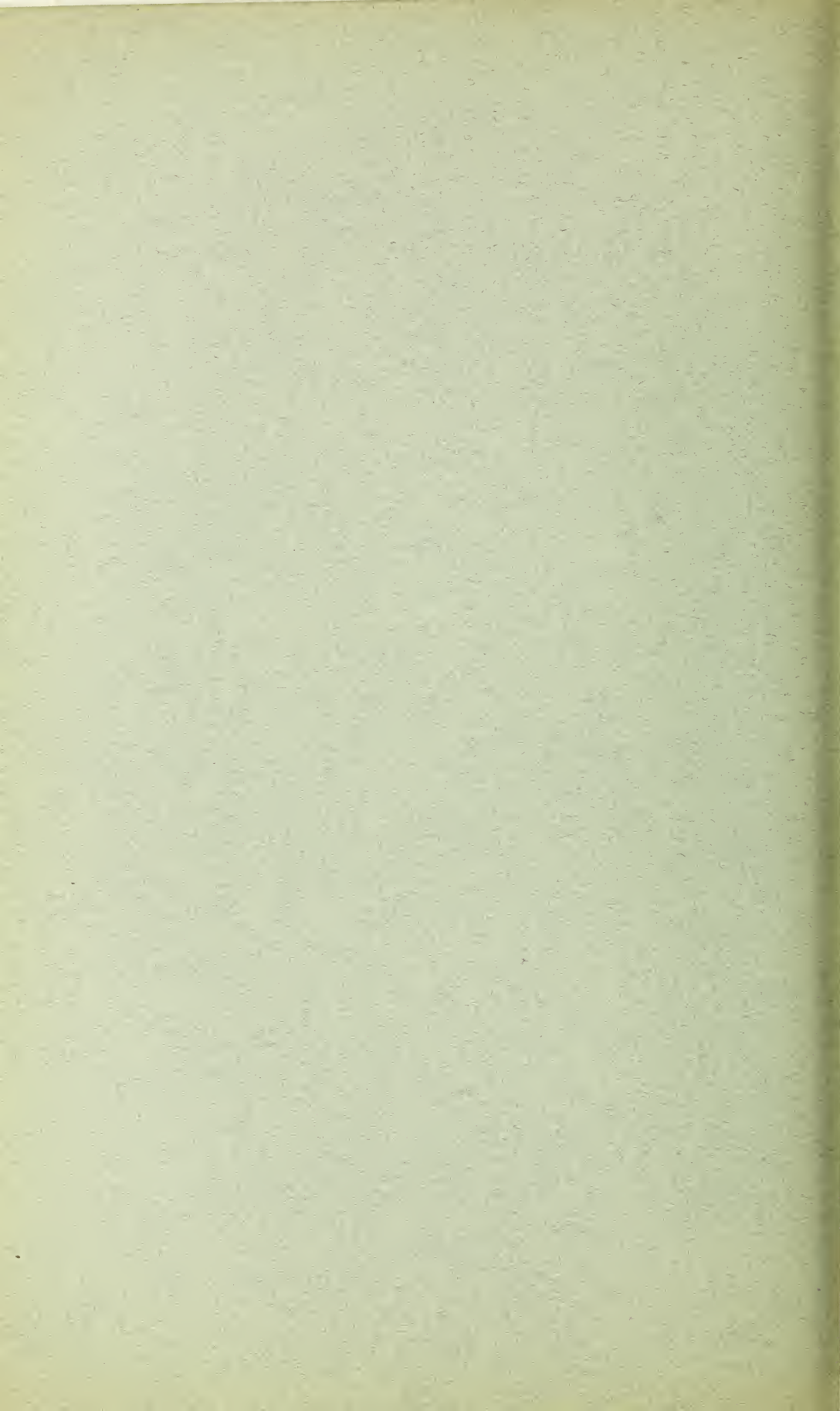
Secretary of the London Hospital.



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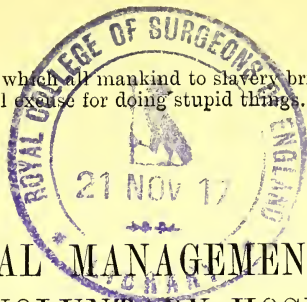
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*Motto:—Custom, which all mankind to slavery brings ;
That dull excuse for doing stupid things.*



THE ECONOMICAL MANAGEMENT OF AN EFFICIENT VOLUNTARY HOSPITAL,

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INTRODUCTORY.

Two alternative methods of dealing with the subject of this essay present themselves. These are :—

- (1) To assume that the Hospital is efficient and to suggest methods of management which will preserve that efficiency and promote economy.
- (2) To describe what is in the writer's opinion an efficient Hospital and to suggest methods of economical management.

It appears reasonable in suggesting methods of management to briefly describe in broad outlines the conditions to which they apply ; and, at the risk of introducing much which is common knowledge, the writer has attempted to deal with his subject in the fuller course open. To save repetition, however, the remarks on management in each department are conjoined with those defining efficiency instead of being separated and dealt with in two distinct parts of the essay.

As views on Hospital construction and management change very rapidly the writer thinks it wise to say, as did Robert Louis Stevenson, that "All my old opinions were only stages on the way to the one I now hold, as itself is only a stage on the way to something else."

It may be added that in view of the fact that the methods of management of a large and a small Hospital must necessarily differ in many respects, the writer has imagined a Hospital of medium size—say 200 to 300 beds—as most likely to possess features in common with all Hospitals.

CONSTITUTION.

The managers of any voluntary institution act as trustees for the persons who provided the funds to establish it, and

who subscribe the income for its maintenance. Their first duty, therefore, is to ensure that while, of course, the Hospital marches with the times, no funds are used except for the objects for the furtherance of which such funds were or are intended. Consequently, a Hospital must be managed under a Constitution which, while always properly safeguarding such objects, is fashioned upon sufficiently broad lines to allow the management powers to vary details with altering conditions.

The primary object of most of the Medical Charities is the medical and surgical relief of necessitous persons.

This object is frequently accompanied by another, which is to provide opportunities for the investigation and study of disease or conditions set up by accidents.

Other objects, varying with different Hospitals, may be the provision of a Convalescent Home, a Samaritan Fund, a Pension Fund, or a Medical School.

A proper Constitution will ensure that all these objects are carried out in accordance with the conditions under which funds are being and have been obtained from benefactors. It will make provision amongst other things for funds being expended in an economical manner (to expend them otherwise would be a breach of trust), that as many patients are treated and accorded reasonable comforts as means allow; and that the persons who are engaged to carry out the work receive fair treatment, and work under conditions in which harmony and a singleness of purpose should prevail.

Such a constitution alone can command the respect and the support of the public, and it must be carefully expressed in Charter or Rules, Bye-laws or Regulations, for the guidance of those managing the Institution.

INCORPORATION.—It is highly desirable that each Hospital should be a corporate body. Unless a Hospital is incorporated the Board of Management is liable for the debts of the Institution, and this circumstance alone makes incorporation worth consideration. Amongst other advantages, Trustees are no longer required, and there is far greater facility in transferring stocks and shares and real estate.

Although incorporation has these important advantages, only a small proportion of Hospitals are incorporated at the present time. These have become so in different ways. A small number—the older institutions—have special Acts of Parliament; some have been granted Incorporation by the Board of Trade, under the Companies' Acts, and a Royal Charter has been granted to the others. The first method being at the present time impracticable, choice must be made between the other two. Although either, of course, answers the purpose, it will probably be considered that the privilege of stating that a Hospital is incorporated by Royal Charter has a certain value.

The cost is about the same, being between two and three hundred pounds, unless some friend of the Hospital will give gratuitous legal aid, when only fees, stamps, printing, and out-of-pocket expenses will have to be provided.*

THE MANAGEMENT.

The management of a voluntary Hospital is generally first of all in the hands of the Governors, who have provided money or rendered honorary service. They elect the Executive, who usually consist of a President, Vice-Presidents, Board of Management, and Treasurer.

THE BOARD.—As a Board can do so much to bring about efficiency and economy it should be selected with care to include, as well as gentlemen who can help in obtaining income or whose names will attract support, those who are able to advise on legal, financial, and other technical questions. It is most important that the medical profession should be well represented on a Hospital Board, and, if alone for the reason that they understand the needs of their own Hospital, the honorary medical staff of the Institution might, with advantage, furnish medical members. Representation on the Board of the honorary staff is a question, however, which must be considered with care, as in certain Hospitals paid medical officers often, in course of time, become members of the honorary staff, and if nominated to represent that body on the Executive, would practically become the masters of other permanent officers with whom they had at one time worked as colleagues. Such a condition of affairs might easily be undesirable, but the objection could be met by only electing to the Board honorary medical officers with a standing of a certain number of years.

THE CHAIRMAN.—The Board elect their own Chairman and his personality has an important bearing on the methods of management. If it is possible to find a Chairman or a Treasurer who is able to devote constant attention to the work, it will not be necessary to have a paid official in complete control when the Board is not sitting, and the senior resident Doctor, the Matron, the Secretary, the Chaplain and other principal officers can be answerable for the conduct of their own departments to the Board or their representative.

* NOTE.—This statement must be modified. Incorporation under the Companies' Acts, where (as would probably be the case in respect of a Hospital) only a limited number of persons would accept the liability attached to membership, should not cost more than £100.

THE TREASURER.—Advantage will accrue to a Hospital by the appointment of a Treasurer who will give assistance in raising funds. In some Hospitals the Treasurer takes an active part in the Management. In the absence of a working Chairman the Treasurer might take his place as the director of affairs when the Board is not sitting, when there would be no need for a salaried head.

* * * *

THE STAFF.—As most of the work can easily be apportioned to different departments the writer suggests for a Hospital of medium size the following staff and scheme for division of duties. Such duties must be elaborated and clearly defined in printed rules.

REPRESENTATIVE OF BOARD AND DIRECTOR.—The Chairman or Treasurer, if either is able to give considerable time and close attention to the work, should fill this office. To such a director will be referred any difficulty as to duties on the border line between two departments.

THE HONORARY STAFF.—It is hardly necessary to say that the prosperity and reputation of a Hospital depend greatly upon its medical and surgical staff, who will consequently be selected carefully by the Board; their numbers and division of duties depending upon the nature of the cases, the number of beds, and the size of the out-patient department.

THE CHAPLAIN.—An economical and efficient way of providing for the spiritual needs of the patients is to make an arrangement with the nearest Church whereby clergy will be sent, in return for an annual payment (often smaller than the stipend of a special chaplain) to visit the sick and conduct the services. Of course every facility must be given to the ministers of the different religions to visit patients who require ministrations other than those supplied by the Chaplain's department. The expenses of this department should, if possible, be defrayed by a special fund.

THE REGISTRAR has charge of medical records. He assists the Honorary Staff in the out-patient department. This officer might also act as lecturer to nurses and direct the electrical department.

THE PATHOLOGIST has charge of the Museum and Post-mortem room and directs assistants there.

THE SECRETARY, whose place is taken during absence by an ASSISTANT SECRETARY, will be chosen for common sense, general business knowledge, a quick eye to note defects, sufficiently good address to approach benevolent people in a persuasive manner, and familiarity with Institutional life. The latter qualification is as important as the others, as a Secretary, whether responsible for the whole Institution or only a part of it will, to say the least, save much time and labour if he is equipped with the knowledge of Hospital work which cannot properly be acquired without some years of actual experience. He must reside in or near the Hospital, or be within reach by telephonic communication. The number and character of employés under his direction will be governed by the nature of Hospital he serves and the plan of its buildings and grounds. His main duties will be:—

Responsibility for the good order of the whole of the grounds, building and plant.

Conveying the orders of the Board to persons concerned.

Provision of Funds.

Direction of the office staff.

Direction of male servants and workmen in such work as engineering and other repairs, plumbing, gas and electric light fitting, coaling, flushing of drains, general cleaning (other than scrubbing), window cleaning, bathing of male patients, etc.

Supervision over the serving of the Out-patient Department and over the Enquiry Officer's or Almoner's Department.

Regulating the arrangements for any male nurses when off duty.

THE MATRON, whose place is taken during absence by an ASSISTANT MATRON or HOME SISTER, should be selected as one possessing experience in management as well as in nursing, as the reception and distribution of food, etc., are, in this scheme, under her charge. This officer supervises the work of a HOUSEKEEPER and the KITCHEN STAFF.

The writer considers that the actual reception and distribution of goods is generally more economically carried out by a woman than by a man, and advises the appointment of a Housekeeper in preference to a Steward.

The number of SISTERS, NURSES, MASSEURS, MASSEUSES, and FEMALE SERVANTS under the Matron's direction will be governed by the nature and plan of the Hospital.

The Matron is responsible for the cleanliness of the wards, bed and living rooms, lavatories, and all parts of the building which are usually cleaned by women.

THE SENIOR RESIDENT MEDICAL OFFICER, whose place is taken during absence by the second resident doctor, has charge, under the direction of the honorary staff, of the medical and surgical work in the wards. THE DISPENSERS are under his direction.

Unless some policy of the Board—other than medical—is affected, this officer should be appointed according to the recommendations of the Honorary Staff, who know more than anyone the medical requirements of the Hospital.

* * * *

As such matters affect cost, the allowances, holidays and training of the staff are dealt with under the heading "Expenditure."

THE AUDITORS. It is hardly necessary to say that a first class firm of Auditors must be appointed to examine the books of the Hospital and to advise on certain financial transactions as occasion arises. The Auditors should be elected by the Governors.

THE SANITARY OFFICER, who may or may not be the ARCHITECT, should periodically examine the whole of the sanitary arrangements and drainage of the Hospital and report any defects to the Board. He must be consulted before any alteration is made in connection with any sanitary fitting. (See also under "THE BUILDING.")

* * * *

The above scheme has been drafted on the assumption that an honorary director is available. If it is not possible to secure the services of such a head, in order to promote efficiency and economy and to prevent friction it is advisable to appoint some paid officer who will be at all times answerable for the good conduct of the Institution and its inmates, with, of course, certain limitations, as a lay official could not be expected to see that a doctor carried out the medical part of his work efficiently, or that the technical side of nursing was as it should be; nor, in ordinary circumstances, could a medical officer undertake or understand the keeping of books, the raising of revenue, or the maintenance of the buildings and plant.

INCOME AND INVESTMENTS.

Good financial management will do much to produce a regular income. A wise Board will not fall into the too common error of launching out, on the strength of a prosperous year or two, into permanently increased expenditure but will

understand that the work is more easily increased than curtailed.

ENDOWMENT.—An endowment fund is an excellent stand-by and must be zealously fostered and, whenever possible, increased. This fund must be carefully divided into two parts; the one to represent the benefactions which have from time to time been received with the condition attached that only the interest is available for the use of the hospital; the other to represent savings resulting through surplus income. It is probable that the first, which is the endowment fund proper, being a trust, must be invested in Securities allowed by the Trustees Act, 1893, and that the Charity Commission has powers to insist on this investment. The Act, however, gives some latitude and a periodical survey of investments, with judicious action, will perhaps improve income.

The portion of the endowment fund represented by savings affords a field of investment as wide as it is allowed by the part of the Constitution governing such matters and occasional expert financial advice will help to improve the holdings and ultimately increase the reserve.

It is most desirable that a record be kept of the conditions under which invested funds were obtained and that in the books and printed accounts it be made quite clear what part of the endowment fund is a trust, the income of which is only available for current expenses, and of what part the *corpus* is so available.

It must not be forgotten that the endowment fund proper cannot be borrowed against or sold without the permission of the Charity Commission, and that that permission is never given except under conditions as to the formation of a sinking fund which entail a substantial reduction of income. Therefore an economical management will guard its reserve fund and look far ahead to avoid the reduction of the volume of good work that such a financial crisis would cause.

Some of the investments may be in real estate and partly represented by the Hospital buildings and land. In view of possible future extension a Board may think it prudent to acquire property adjoining their Institution, although they will often find that the presence of their buildings has increased the price; but it is more easy in this connection to invest than to realise, as, by a recent decision, Hospital land, after being registered at the Land Registry Office to secure a proper title, cannot be dealt with (sold or mortgaged), before the permission of the Charity Commission has been obtained.

It is hardly necessary to say that Samaritan, Pension, Medical School and other auxiliary funds must be kept strictly apart and to advise that each fund should have its separate books and banking account.

INCOME TAX.—Full advantage must be taken of the concession of the Inland Revenue in respect of the return of tax paid by hospitals, both in regard to real estate and other investments.

SUBSCRIPTIONS.—Careful calculation will show that the average annual subscription is worth at least seven years' purchase, so every effort must be made to keep up the level of this source of revenue. Every year subscribers die or drop off and new subscribers must be eagerly sought to fill their places. If a collector is employed on a commission basis he should be offered a very handsome percentage of funds obtained in this way as, with attention, the revenue from subscriptions is for practical purposes as good and as regular as that from investments.

DONATIONS.—It does not take anything like such an effort to obtain donations as annual subscriptions, and the total under this head will vary greatly, but the management must endeavour to annually keep it above a certain sum, reserving special efforts for occasions when extra money is required.

The hospital should never neglect a person who has once given a donation, but over-persistence in asking him to give again should be avoided. Let him have a copy of every report or pamphlet that is issued, so that he can have no excuse for forgetting, and probably one day he will give again or leave a legacy.

COMMISSION.—Many people dislike the idea of any part of a contribution going in the form of commission to a collector, but consideration will show that this is the fairest and most business-like form of recompense—that of payment according to results. From the point of view of economy, a Board may find it in the end the cheapest and most satisfactory method of raising funds.

LEGACIES.—If a hospital of many years standing does not receive its share of legacies it is a sign that in the past it has not fully or skilfully advertised. A subscription or donation rarely comes as the direct result of one paid advertisement, but constant publicity has a cumulative effect upon the minds of the public, and will sooner or later earn its reward. One handsome windfall will repay with interest several years of advertising. A hospital should advertise regularly in the better daily papers, some legal journals and certain annuals. Positions must be chosen and type displayed with a view to effect. It is a good thing to employ a half-tone or line block when possible, and to always bear in mind that a reader's attention must be attracted before he reads the matter in the advertisement.

INCOME FROM THE CENTRAL FUNDS.—As London Hospitals obtain a large part of their income from the three Central Funds, it is profitable to give their wishes and recommendations every consideration, and to expend their grants scrupulously as desired by them.

PAYMENTS BY PATIENTS.—Funds are sometimes provided by the patients themselves. The writer does not intend to fully discuss whether it is right or wrong, after the interests of the medical profession have been properly considered, to obtain money in this way, although it appears to him that it is just as equitable as to accept grants from the Hospital Saturday Fund, which collects small subscriptions from persons who expect to receive a *quid pro quo* when they require it. If patients' payments are taken they must be regulated in a manner which will be indicated on another page.

LOANS.—When a Board wishes to borrow money it should be borne in mind that an over-draft is cheaper than a loan, and that a sale of stock may be more desirable and economical than either. There is nowadays much competition between Banks and a little pressure will sometimes result in the reduction of the loan interest from say half per cent. above bank rate (the usual charge) to bank rate.

THE PATIENTS.

Apart from accidents or urgent cases, which must receive medical attention at once, all patients whether in or out, must be examined as to their financial suitability by an Almoner or Enquiry Officer. No hard and fast rules can be laid down for acceptance or rejection for financial reasons. Patients cannot be sorted into groups as butchers, bakers and candlestick makers. A patient might have £100 a year and only himself to keep, at most hospitals he would be financially unsuitable. Another might have £100 a year and a large family, he would at many hospitals be suitable. One patient has a large enough income to consult a medical practitioner in respect of a simple ailment, but could not afford to pay £2 2s. 0d. to a specialist if, say, his eyes had gone seriously wrong. Each case must be considered on its merits. The truest economy is effected, both from the medical and the financial point of view, in seeing that the benefits of the hospital go to those who are needy and will reap the most physical good.

In a hospital with an ideal management, no patient will be treated for mere clinical interest, or because his case is recommended by an influential friend. Ideals are, however, much sought after but rarely attained and, therefore, for business motives, the lay as well as the medical part of the management

should have some voice, if not in the admission of patients, in the order of their admission.

LETTER SYSTEM.—If a hospital is bound by a letter system, the wishes of subscribers should only have preference where all other things are equal.

PATIENTS' PAYMENTS.—If the system of obtaining payments is in force, the Enquiry Officer must decide whether the patient is able to make any payment and what proportion of the maximum sum fixed by the Board must be contributed.

NUMBERING OF PATIENTS.—As most hospitals use their statistics respecting the number of patients treated when appealing for public support, and as the system has a bearing upon the calculation of the cost per occupied bed, which figure is also used for purposes of comparison, it would be a good thing if pressure were brought to bear to obtain the employment of a uniform system of numbering.

The writer considers that every patient should be counted a second time one year from the date of his first receiving treatment; that if he is treated as an in as well as an out patient during the year he should only be counted as an in patient. Each attendance should be registered instead of a system of approximating the number of attendances being used.

THE BUILDING.

The writer will not attempt to suggest a plan of Hospital Buildings. Most hospitals have been altered and added to from time to time, and could not attain to modern ideas of perfection unless they were pulled down and built again; even then the shape and size of the land available would probably prevent an entirely perfect building being erected. Many things, however, may be improved without rebuilding.

An efficient hospital must be properly drained, ventilated, lighted, and heated, and have a good water supply.

DRAINAGE.—If the regulations of the London County Council are strictly followed, a satisfactory drainage system will be the result. The management should make itself acquainted with any new regulations issued from time to time, and revise its arrangements to suit them as soon as funds permit.

Briefly put, the principal points of efficient drainage are as follows:—

All drains must be disconnected from the sewer by suitable traps and be well ventilated by inlets and outlets in safe positions, thus securing a through current of air through

drains and soil pipes at all times; at all other points drains must be trapped and pipes made air-tight to prevent entrance of gases therefrom to the buildings or grounds of the hospital. Manholes should be provided where bends or connections occur, and these must be used for regular testing and inspection.

Sanitary appliances should be of the simplest description and kept perfectly clean inside and outside, as well as the spaces round them; if this is done there should be no smell from any part. No appliances should be boxed in by woodwork or other casings. It is better not to provide wash-basins with overflows, as these get foul and are difficult to clean.

The writer does not advocate the use of disinfectants, as they only mask a smell instead of driving it away. If they are used at all they should be odourless.

It will generally be found that examinations by a local authority are not so thorough or satisfactory as those of an independent experienced sanitary expert, who may or may not be a member of the permanent hospital staff. Some such examination is usually necessary to ensure the maintenance of the sanitary arrangements in perfect condition.

VENTILATION.—The subject of the ventilation of hospitals is a large enough one to occupy a thick volume, let alone a few sentences in a short essay.

Very modern systems such as the Plenum (which provides heating at the same time as ventilation) can only be perfectly attached to very modern buildings and as the management discussed here is probably only in respect of hospitals built some years ago, we must take it for granted that the air entering the hospital is of average quality and do our best to see at least that nothing connected with our building lowers that standard.

An eminent architect says, "Mere change of air is not all that is required to secure good ventilation; cleanliness and the continuous removal of everything which defiles the atmosphere is quite as essential, particularly in and about the channels or ducts which convey air from without to within the building."

If we manage in accordance with this maxim and our system allows the air in the wards and other living rooms to be changed not less than six times an hour, management in this respect will be as efficient as environment will permit.

LIGHTING.—For reasons of health, economy in white-washing and painting, as well as for the provision of a satisfactory light it is presumed that the electric light is installed in every efficient hospital. It must be impressed upon all inmates that it is there for lighting and not for illuminating purposes. Strict rules regulating its use must be made and enforced.

In changing from gas to electricity it is wise to leave some of the old fittings in each part of the building, although they must not be used except when the other light fails. The last mentioned rule will perhaps be modified in the case of the nurses' and servants' quarters, where heat of some kind is required to be applied to an instrument used for toilet purposes, where, for safety, gas is preferable to a spirit lamp.

The electric installation should be tested at least once a year. The supplying companies will undertake this duty for a small fee.

Inflammable shades on fittings must be forbidden at all times. At Christmas, or when decorations are used, nothing likely to catch alight should be allowed near the fittings, because there is always a danger, although perhaps remote, of electric light bulbs exploding.

Although it is a question whether the interest on the cost of installation should not be shown in the accounts, there is no need to write off any sum for deterioration as far as wiring is concerned. There is no known limit to the durability of the best quality wiring except in damp situations (which should be examined at intervals for reasons appearing later). The wiring would, in any case, never be likely to go wrong altogether, and faulty pieces can be repaired from time to time.

DANGERS OF ELECTRICITY.—With an ordinary lighting pressure up to 200 volts there is no danger in touching fittings, although a person in a weak state of health might receive a dangerous shock. With an alternating current, however, there is danger in grasping fittings, especially if the hands are wet for ~~for~~ a person is standing on a wet floor. It follows therefore, that, in hospitals at least, exposed fittings or tubes conveying current should be protected by non-conducting material when within reach.

STORAGE.—It is a question worth considering whether some sort of storage should not be generally provided as is done at some London Hospitals. It would, for instance, perhaps endanger life if the lighting failed during a surgical operation.

POWER.—Where lifts, motors, etc., are run by electricity it is at a pressure up to 500 volts and care must be taken that no unauthorised person has access to any part of such machines or their conductors. Attendants should be provided with rubber gloves.

COST.—The cost of the supply of electric light is falling especially in districts where there is competition. Recently in a London hospital a reduction of $12\frac{1}{2}$ per cent. was obtained simply by asking for it. Electricity for driving machinery,

etc., is supplied at a lower rate than for lighting, but when only a few fans or simple appliances are involved the saving is too small to justify the expense of a separate meter.

Periodical inspections must be made to see if lower candle power lamps can be put in at certain points and to watch that the higher candle power lamps are not burning dimly and giving at an increased cost the same light as a lower candle power lamp.

COOKING APPARATUS.—Gas stoves should be selected of size suited to the work—not larger. If the work varies, the most economical method is to hire stoves from the Gas Company, who will keep them in repair at no extra charge. Much care must be taken when buying stoves as they are very expensive and rapidly get out of date. With stoves and steamers constant supervision must be exercised to prevent waste of gas or steam.

Gas rings may also be required in ward kitchens, but they must be closely watched to prevent waste. A ring fitted with a by-pass, which automatically lowers the gas when the kettle is lifted, may be found useful. Gas rings in addition to open fires should not be provided in ward kitchens except under special circumstances. For safety all gas rings must stand on metal or tiles, and not near anything inflammable.

WATER SUPPLY.—As, in London at least, a constant supply is now obtainable practically everywhere, all draw-offs, except baths, should be upon the main, as water may possibly be taken from them for drinking purposes. W.C.s., baths, hot water apparatus and boilers should be supplied from cisterns of ample size, to ensure twenty-four supply in case of the failure of the main supply. In such cases water may temporarily be taken from the baths. These cisterns must be kept perfectly clean to avoid their becoming a source of contamination. It does not appear to the writer necessary to provide filters in London, except where sterilised water is wanted for the Operation Theatre. The resident engineer must periodically inspect all taps to prevent waste, and the expensive nature of a meter supply must be impressed upon everybody. Baths may be fitted with special automatic cisterns which only give the quantity required for each bath. If the passenger lifts are run by water power, regulations must be made to ensure them being used only when absolutely necessary. A calculation recently made at a London Hospital showed that each time the lift was used, it cost one penny for water.

In view of the excessive quantity of carbonate of lime from chalky water in London, water softening apparatus may be economical where the building is unusually large, but for a hospital with, say, under 250 beds, it will not repay its cost,

and the expense of attendance. To prevent the scale getting the upper hand, each boiler must be scraped every time it is out of use, and the piping in connection with any calorifiers, etc., should be similarly treated.

All exhaust steam from the heating apparatus, driving machinery, laundries, and water from the lifts must, in an economical hospital, be employed for heating.

In Belfast it has been found that it is worth while to install steam engines for driving ventilating fans and laundry machinery in order to secure the economy from the use of exhaust steam, the power costing the same as electricity, but supplying, in addition, heat for the hospital.

FIRE PROTECTION.—It is hardly necessary to say that all efficient hospitals must be amply protected against fire, and the appliances placed under the constant supervision of an expert. Sufficient hose is necessary to reach every part of the building, and any person displacing apparatus without cause must be severely dealt with.

Hydrants may be supplied direct from the street main or from tanks. The former method may be more economical, as only a small annual rental is charged instead of the water being supplied by meter. In case of the failure of the main occurring at the same time as a fire, the result would be disastrous, so storage supplied by tanks should also be available. It must not be forgotten that the water pressure in London generally will not reach above 60 feet, so unusually high buildings must also be provided with apparatus to augment the pressure. Water pails must be plentifully supplied and duly inspected to see that they are full.

The Staff must be regularly drilled, and the inspector be instructed to pay surprise visits, when the alarm bells are rung and the staff go to their appointed places. All apparatus must be periodically used.

In the event of a fire, the first duty is to save life and the second to save property. If the building is lighted by electricity, the gas should be turned off as soon as possible. Electricity should not be turned off until all inmates have left the building, but all high-tension circuits (which are not often fitted) must be turned off at once. After water has been used for fire extinction, and the danger is past, care must be taken that the tanks for supplying the boilers are full, as, should the water in the boilers fail, there is a danger of an explosion. In view of the possibility of a fire being caused by electricity, a few pails filled with sand should be kept on the premises, as water for extinction in some cases is of little use, and damp augments the danger. It will be noticed in this connection that the London County Council insist upon a supply of sand being kept in theatres.

CHIMNEY CLEANING.—For health reasons as well as because of the danger of fire, chimneys must be cleaned regularly. There is now a process by which this can be done without the former mess and trouble and at very little increased cost to the old system.*

DISINFECTION.—A chamber should be set aside for the purpose of disinfecting, when necessary, bedding, etc. In addition to this provision, enquiry should be made if the local health authority will disinfect free; many of them do, and in time of pressure the assistance is most useful.

HEATING AND HOT WATER.—Whatever the system employed, great economy, by constant supervision, may be exercised in this department. Unnecessary heating or extravagant use of hot water or steam means greater expenditure.

A REFUSE DESTRUCTOR is not expensive to provide and is most useful for disposing of offensive dressings and other objectionable matter.

DUST REMOVAL.—All dust and refuse receptacles must be emptied daily.

WORKS DEPARTMENT.—A small Works Department is always useful and economical in every Hospital and the size of the department depends upon the amount of work to be done. It may be found possible to combine the washing down of walls and ceilings for painting and white-washing with window cleaning and flushing of drains and gulleys, and in this way one or two labourers could be constantly employed. The resident engineer should be capable of attending to the electric light fittings, bells and telephones, as well as the heating and hot water apparatus. If he can also undertake plumbing work, can wipe a joint and carry out the smaller jobs which are always cropping up, much money will be saved. A good carpenter will also be found economical in undertaking furniture repairs, the making of bed-boards, occasional cupboards, etc., which cost a large annual sum if put out. More ambitious work such as building or re-laying drains, will usually be found less costly if placed in the hands of an outside firm.

PAINTING AND CLEANING.—In order to equalise the annual expenditure under this heading, it is as well to divide the buildings into portions and do, say, one-third or one quarter of

* NOTE.—The writer understands that the Company which introduced this process has discontinued operations.

the interior every few years. The outside of the building will require attention less frequently, this depending upon the position of the hospital. It will be found that hospitals in the neighbourhood of manufactories will require the exterior wood-work repainted or cleaned much more frequently than those remote from such places.

TELEPHONES.—A telephone installation is advised as tending to lessen the expense of service. Telephones must be handled carefully and the receiver not kept off its rest longer than is necessary for the conversation, all the time it is displaced current is being used.

INSURANCE.—All buildings and their contents must be fully insured against fire, and the policies carefully examined by an expert to see that the conditions are satisfactory, and that not only is the property of the hospital covered but also that of the inmates, and that provision is made for the linen of the hospital and its servants while at the laundry. Most of the companies offer the same terms, which are 1s. 6d. per cent. upon buildings and 2s. per cent. upon contents, returning a commission of 15 per cent. to the hospital. Such business, however, is keenly sought after, as it is known that fires are not likely to occur frequently where there are people always about both day and night. There is, however, an opportunity for some economy in this direction, as some of the old-established companies work independently, and will offer the same rate for buildings and contents when the two are together.

Some companies work upon a bonus principle and make a handsome return of profits at the end of certain periods. There is, therefore, something to be gained by looking closely into the terms of the different companies.

BOILER INSURANCE.—Boilers should be insured with a first-class Boiler Insurance Company, who will periodically inspect and make necessary recommendations as to safety, repairs, etc.

LIFTS.—Adequate provision in the way of passenger and service lifts will be found to lessen the cost of service. These lifts must be inspected periodically by an expert firm.

LAUNDRY.—The writer does not believe that any economy will be effected by a Hospital doing its own washing, although perhaps it will be sometimes necessary to make moderate provision for badly-soiled linen.

GENERAL UPKEEP OF BUILDING AND PLANT.—The main maxim to bear in mind in keeping a building efficient is to let

nothing fall into disrepair, but to have all necessary matters, however small, immediately seen to. The staff should be instructed to report any defect at once.

Appliances may be quite efficient and up-to-date, but to quote the words of the Architect of the Royal Victoria Hospital at Belfast—"The more perfect an instrument is for accuracy and effective work, the more worthy it is of careful upkeep, and the more easily it may be rendered faulty by neglect or improper usage."

ORDINARY EXPENDITURE.

PURCHASE OF SUPPLIES.—All goods should, as far as possible, be obtained by tender, and contractors asked to state a price for alternative periods, say six or twelve months. Invitations for tenders should be widely advertised in papers which experience tells circulate amongst contractors.

When the tenders have been received, they should be carefully tabulated, not merely placing the prices from each contractor for each article side by side, but working them out on the basis of the probable requirements of the hospital, showing what the supply of each article would cost at the prices quoted by each contractor. The accompanying table (Appendix 1) will illustrate this system.

The Board of Management should intimate that they do not necessarily intend to accept the lowest or any tender, and the conditions on each contract form should be carefully drawn up with legal assistance in order that the institution may be protected should the supplies not be up to the necessary standard.

In considering tenders, the question of the season over which the contract runs must be well considered, especially in the case of certain articles. For instance it is to be expected that the price of coals between March and September would be much lower than the price from September to March, and lower than a twelve months' contract; but experience shows that in this article a twelve months' contract is generally the more economical as the contractor can make advantageous terms with the collieries. In milk too, the price in the winter is generally higher than the price in the summer, but if the wholesale supplier can look forward to a long contract he can make corresponding terms with the farms.

In these days of surprises in the matter of taxation tenders for sugar, tea, and other dutiable articles should receive close attention, and if the budget time is near, and there is uncertainty as to how the Chancellor of the Exchequer proposes to draw the income of the forthcoming year, perhaps

it is wise not to make a contract at all, as to do so would be entering into speculation which is not one of the functions of a Board. However a proviso can be made that the price be altered according to any change in taxation.

Side by side with the prices of the contracts should be the prices previously paid by the hospital, and also, if available, some information as to what prices other institutions are paying should be at hand. If it is found that the lowest tender is higher than that paid by other institutions the contract should not be accepted, but negotiations opened with various merchants to see if a supply can be obtained at a lower price. Of course it is essential that only tradesmen of good repute be dealt with, and deliveries carefully watched to see that they are up to the standard of the terms of the contract. In the matter of milk, it is as well to have an analysis made at least once a quarter (the following is a good standard:— That the total solids should not be less than 12 parts per cent. by weight, of which not less than $3\frac{1}{4}$ parts should be fat). The public analyst of the district will probably do this work for a nominal fee.

Meat: With this article of food, alternative prices should be obtained for both English and foreign meat, as it may be found that in spite of a higher price for the former variety, it will in some cases go further than the foreign, and not have the same loss of weight in cooking.

Fish and Poultry: Ordinary fish should be contracted for in diets of a certain weight, exclusive of tail and head; and fowls procured of a weight to easily cut up into a certain number of diets. Fish not often required need not be priced as, for instance, when there is a glut of salmon in the market, it can be bought without reference to the contract and will be as economical as meat for the general dinner. Another method is to obtain the fish straight from Grimsby and to make it someone's duty to clean it and cut it up. In view of the extra service required, the economy of such a supply is doubtful.

Bread is, of course, priced by the stone, but arrangements should be made for a supply of rolls, which will be found economical in use at the officers' and nurses' tables and a pleasant change from ordinary household bread.

It is not always practical or advisable to obtain tenders for the supply of vegetables as the supply changes with the season. The more economical way is to make arrangements with a large dealer to supply what is required at current market prices. This also gives an opportunity to provide fresh fruit, when the price is moderate, instead of sweets, at certain tables.

Malt liquors are generally quoted at the same price, the difference in the contract being in the amount of the discount given, and the allowance made for lees returned. As wines and spirits are not so often ordered by medical men as in past

years, it is, except in the case of a very large institution, seldom necessary to obtain contracts for these articles.

The fishmonger as a rule is asked to include ice in his contract; and mineral waters should be obtained by contract unless the size of the institution justifies the purchase of plant and the hire of labour for manufacturing.

DRUGS, DRESSINGS AND BANDAGES.—These may or may not be supplied by contract. The question depends greatly on the character and size of the Hospital. In any case the prices must periodically be compared with those of other institutions.

In these days of trusts and sudden and remarkable changes in the prices of certain drugs, cotton and india rubber it is probably hazardous to contract for a long period, so perhaps it will be found economical to deal with and trust firms of good repute, who may be relied upon to immediately give any advantage occasioned by fall in price and will often quote special terms if an order for a large quantity (to be taken as required) is placed with them.

DISTRIBUTION OF STORES.—A recent writer on the subject of hospital economies employed a phrase which might well be taken as a motto by all Hospital Boards. He said that "economy in purchase is only one aspect of the matter; economy in use is probably of greater importance still."

The present writer has advocated the employment of a lady housekeeper who, he thinks, should have the reception and distribution of all articles of food, linen, hardware, crockery, and cleansing materials. He also ventures to express the opinion that such an officer should be a fully-trained nurse, and, if possible, one who has been a ward sister. He thinks that such experience, in conjunction with a clear head for figures and aptitude for business, should be possessed by any candidate selected to fill the post. The success of the arrangement will be greatly due to the fact that the housekeeper has during her experience as a probationer, nurse, and sister, become aware of the places where economy is put on one side and the circumstances in which, without any dishonest motive, a too ample supply of food or other articles is liable to be requisitioned.

It must be remembered that it is far easier to divide amongst a number of persons a supply which is in excess of the actual requirements than to give to each his exact share; therefore in the bustle of daily work there is a constant temptation to save time which should be devoted to proper calculation and to ask for more than is required. In order to give the different wards and departments a proper opportunity of ordering exactly the amount of goods due, as little time as possible should elapse between the time of the requisition and the time of use. In

some hospitals the requisitions for a ward are drawn up by the night staff and delivered to the stores the morning before the day when the goods are delivered, thus making probably 30 hours between the calculation and the receipt of the goods. With such a system it is practically impossible to do anything but estimate the requirements, and, to save trouble, that estimate is generally on a liberal scale.

Although it would be difficult to say where the waste comes in, it is quite certain that it is there somewhere, and as it is quite practicable in every ward, which does not take night casualties, to order for the next day's use almost to an ounce what is really wanted, it is hard to understand why a system should not be universally employed by which the requirements are decided upon in the late afternoon and the necessary goods ordered from the tradesmen by telephone or messenger.

The housekeeper must also be in a position to readily compare one day's requisitions from a given ward with those for some days before, and there will be found appended a sheet which is advocated for use in wards. (See Appendix II.)

This sheet will last one month, and can be preserved in a stiff cardboard cover bearing the name or number of the ward. The housekeeper will immediately see from it if there is any unusual fluctuation in the requisition for any given article, and, if the number of patients does not give the explanation, enquiry can be made to discover whether a mistake has not been made or why the increased or decreased quantity is required.

Another sheet, coming from the matron, will give the requirements of the staff for the day, and the details of the two sheets are then placed together on a general paper, from which directions may be given to the kitchen and the stores. As this scheme applies to a medium-sized hospital, in which the housekeeper has charge of the stores, the latter can be issued with the help of the general paper last named.

The daily issues must be entered in a book which also shows the daily number of mouths to feed. This book in most hospitals will be almost as much of a stock book as is required for practical purposes, although perhaps such articles as wines and spirits, or anything else of which a daily supply is not received from tradesmen, might be accounted for in a separate book. The book will also rapidly admit of a calculation of whether the issues exceed the diets allowed by the Board.

As meat is one of the principal articles of diet, much economy can be exercised in the manner of its distribution. All meat, except that needed for the officers' tables, should be carved in the kitchen, and by someone who can really carve. (One of the porters can be quickly trained for this duty.) The slices are then weighed and the proper quantity for each ward placed in the metal box provided. It will be found that this system, in addition to saving a large weight of meat, will pro-

vide a far more appetising meal than if the meat were carved in a hurried and unskilful manner in the ward kitchen.

The ordinary diet of bread allowed is far more than is necessary in the majority of cases, therefore a liberal discount can be deducted before the daily quantity is delivered to the ward, for it is perfectly easy for a second supply to be asked for.

The medical staffs of most hospitals require the milk to be sterilised. It is probable that there is no perfectly satisfactory way of sterilising milk except that of bottling it in small bottles and having the whole of the bottles enveloped in steam. This, however, entails much labour, and is expensive in other respects, and probably, as the system in force in most hospitals is that of pouring the milk in bulk into a steriliser and bringing the temperature up by means of a surrounding steam jacket and then gradually lowering it, the only recommendations in this respect appear to be that everything with which the milk is brought into contact should be in a condition of immaculate cleanliness, and that the milk should afterwards be stored in a cool place. These precautions are, of course, beneficial to those who consume the milk and at the same time make for economy, for should a quantity of milk become tainted or sour, naturally a serious money loss is involved.

It is hardly necessary to say that in the main articles of diet what is good for the patients should also be good for the officials, although the latter perhaps, who are in the hospital from one year's end to another, are entitled to more variety of diet.

A sharp eye should be kept on the dripping to see that, where it is possible, it is used instead of lard; any not so utilised should be sold in the best market. There is keen competition for dripping and other discarded odds and ends of food.

To divide exactly the cost of feeding the staff from that of feeding the patients, it is necessary to have separate kitchen arrangements. Even then it cannot be done with complete accuracy. The result obtained does not appear to be worth the extra cost and trouble.

HARDWARE, CROCKERY, BRUSHES AND CLEANING MATERIALS.

—The distribution of these articles will, no doubt, be in the same hands as that of food. It is the custom in some institutions to have the crockery stamped with some distinguishing mark, generally the hospital crest, in a different colour for each department. Although in buying a quantity this is not an extra expense, it has the disadvantage of making the hospital run the risk of over-stocking an article the use of which may be later discontinued. On the other hand, it simplifies the stocktaking, which should periodically take place in every well regulated establishment, and prevents

the objectionable practice of one ward or department borrowing articles from another. It seems, therefore, that the best course is to have articles which are not likely to be changed stamped, and those of which the use is only very occasional left without a distinguishing mark. From time to time the stock should be reviewed, and the question considered whether enamelled iron vessels may not with advantage and economy take the place of crockery. The supply of brushes is greatly governed by whether the floors are polished or not. In some hospitals it is possible to have polished floors, but in others where the patients are not steady upon their legs it is obvious that these would be a source of danger. The issue of all cleaning materials should receive the most careful supervision, and the scrubbers cautioned against waste of soap by leaving it in the pails; care must also be taken that the porters do not use an unnecessary quantity of polishing paste upon the brasswork. The stock of soap should be a large one, as when it comes from the manufacturers it is always very soft in the middle of the bar. Bars should be cut up into convenient pieces and stored for some months before use, when it will be found that the soap so prepared will go twice as far as the same quantity used immediately after purchase.

LINEN, ETC.—In whatever hands the distribution of the linen is placed, a strict account of its use must be recorded, and the stock book should show on one side the materials as they come from the draper,—on the other the quantity served out from time to time to the seamstress and a note of the articles into which it has been converted. It is as well for some responsible person to inspect weekly all articles in use in the hospital and to give instructions for repairing and replacing. This will have the effect of maintaining the stock in an efficient condition, and also prevent any large or sudden call upon the resources and equalise the expenditure.

COAL AND COKE.—The kind of fuel used depends upon the character of the stoves and heating arrangements. A careful account should be kept of its issue and supervision exercised over its use. The wards should be provided with bins which admit of the coal being taken from the bottom. This prevents an accumulation of small coal. It will be found that a small proportion of steam coal mixed with the household variety makes a slow-burning fire, although it has the disadvantage of giving much ash. All cinders must be carefully sifted from the ashes and again used in the wards or boiler-house.

SURGICAL STORES.—An equally vigilant eye should be directed to the issue and use of surgical stores, water beds, etc. In respect of the former, the surgeons' orders and

requirements cannot always be questioned, but their attention may from time to time be drawn to any increase in cost of a particular dressing, in order that they may consider if another can be employed in its place. In addition, any abnormal increase in the quantity used may be brought to their notice.

Proper care will lengthen the life of waterproof sheeting and beds. When it is to be used a water bed should be placed on a hair or fibre mattress over a thin wooden framework exactly fitting the bedstead, this will prevent sagging. When in the position required the bed should be filled with warm water through an ordinary funnel. Great care must be taken that no grease or oil touches the bed as anything of a greasy nature rapidly makes the rubber perish. Before removing the bed from the bedstead all water must be drawn off, and before the bed is stored again the whole of the air must be pressed out and the stopper carefully replaced.

The latter point is most important as, otherwise, stoppers will probably be mislaid and the bed consequently rendered for the time being useless.

DRUGS.—A periodical report should be placed before those who prescribe the medicines for the patients, showing the quantities and prices of the principal drugs used, side by side with any notes of increases in prices or unusual increases in quantities.

It will be found that certain proprietary articles which have a well-known name are often higher in price than goods of the same quality whose vendors have not to recover the cost of extensive advertising. For instance a hospital uses a large quantity of extract of malt. A certain brand costs sixpence per one pound tin. It will be found that just as good an extract can be obtained at half the price.

There is for some reason great variation in the prices of different brands of chloroform, the highest costs three times as much as the lowest. Careful consideration should be given to the uses for which the chloroform is requisitioned, and if necessary two or more qualities kept to fit in with different requirements.

Steel wine, which entails an expenditure on white wine of some sort, is far more expensive than citrate of iron and ammonium, and the majority of physicians would just as readily prescribe the latter.

INSTRUMENTS.—In this department the co-operation of the Surgical staff must be obtained and their attention constantly drawn to the cost of the instruments they requisition.

Many surgeons insist on the goods of particular manufacturers who generally, unhappily, charge highly for an article which can be bought in a better market elsewhere. Economy may

be effected by bringing, as occasion offers, samples of cheaper (and equally good) articles to the notice of the Surgeons.

WASHING.—From careful enquiry into cost it appears safe to say that no hospital which does its own washing can compete in regard to price with laundry companies working for a profit. The explanation probably lies in the fact that a company which maintains a large staff to carry out its miscellaneous work can fit in the washing for a hospital with that for families or hotels, etc. A consideration is also that with a certain class of work the hands are very much pressed during one part of the week and practically free during another part. Again, no laundry can succeed which is not near a neighbourhood where labour is easily obtainable, but if an institution built a laundry in a district readily supplying hands, it might be at a distance which would greatly increase, by reason of cartage, the cost of the work. A hospital which could make its arrangement fit in with those of a public laundry would probably be able to have its work carried out at a very low price.

Washing that is put out should not cost more than ninepence a dozen for ordinary articles in daily use. Nurses and other officers should be allowed to send their personal washing to the same laundry as the hospital, and a weekly sum allowed in each case, say from 1s. 8d. to 2s. 6d. a week, any excess over that amount being paid by themselves. It is not advisable to make a cash payment as it will be found that some of the servants and others will attempt to be economical in this respect to the detriment of cleanliness.

As will appear later the writer advocates the consideration of joint laundries for hospitals. He believes that two large London Hospitals have taken some steps in this direction.

SALARIES, WAGES, EMOLUMENTS, AND HOLIDAYS.—The number of officers and servants employed is affected by the plan upon which the hospital has been built. Probably a large saving in labour is effected in the new hospital at Belfast where all the wards are side by side, lighted from above, and where all the administrative department is in one block. Naturally, in a hospital divided up into pavilions and connected by long corridors, a larger staff is required.

It having been decided what servants are required, every effort should be made to attract competent people and every inducement given to them to remain a reasonable time in the service of the hospital. Economy in the end will doubtless be secured by the payment of liberal salaries and wages and by the provision of healthy and pleasant accommodation.

Holidays affect expenditure under this heading as substitutes have to be provided. These should be ample, especially to those resident.

In the nursing department all that is possible should be done in the way of making the training profitable to the nurses, and although this may perhaps entail a certain amount of expenditure, yet it will be economical for a better class will be attracted and induced to stay ; whereas any shortage in the supply would mean the very heavy cost of obtaining temporary nurses from an institute. Except in the larger hospitals the question of obtaining suitable applicants is a most difficult one, and institutions which do not train their own nurses, should provide themselves with some special attraction such as the teaching of the application of electricity, or massage.

Where a hospital trains its own nurses, it will be found that a properly managed Nursing Institute in connection will be a source of profit as well as an attraction.

RENT, RATES AND TAXES.

RENT.—It is to be presumed that the managers of an economical hospital will consider if it is not cheaper to purchase instead of to hire any premises necessary for the work. They will of course, ascertain if any part of the reserve or endowment fund is applicable for investment in this direction.

RATES.—It will be remembered that in London, at least, once in five years an opportunity presents itself of appealing against an excessive assessment, although indeed special circumstances, such as alteration in size of the premises may be any year inserted for consideration in the "provisional list."

Sooner or later an expression of opinion as to the fairness of hospitals paying rates may be asked for. In coming to a conclusion on this point it must be remembered that if a hospital ceased to pay rates, all the occupiers in the same rateable area would have to bear the burden and could then claim to be indirect supporters, and on that ground decline to contribute further. In addition, a hospital obtains direct benefit from paving, lighting, and police.

TAXES.—Income-tax is recoverable (see under "Income.")

The Inland Revenue authorities in some districts have recently been energetic in trying to enforce the tax for male servants. Hospitals employing male nurses and a number of porters, if this payment were universally demanded, would have a new and heavy expense, and in such circumstances probably the only thing to do would be for the institutions to combine and, if legal opinion says they have a promising case, to share the cost of contesting the claims.

ACCOUNTS.

Published hospital accounts include an income and expenditure account which divides the items up under separate headings and which is prepared on what is called a uniform system. This account is practically an analysis of the cash-book for twelve months, generally from January 1st to December 31st. It is, of course, not an ideal method of presenting the figures, as if heavy sums are paid which belong to the previous year and the tradesmen are also settled with late in the same year the amounts paid for certain supplies will appear to be unusually high. In addition, stocks of goods in hand are not taken into consideration.

The statement, however, does not pretend to be in any sense a balance-sheet; it has a certain value, for the amounts under the various headings from year to year can be used for purposes of rough comparison.

A really ideal form of account would include only income and expenditure belonging to the year in question, and under expenditure would show such things as interest and sinking fund in respect of works provided for the hospital for the purpose of procuring certain supplies or undertaking certain work, orders for which, in the absence of such a capital outlay, would have been placed in the hands of tradesmen.

The Cash Side of this statement is supposed to include all the cash received, but does not always do so. For instance a London hospital has an entertainment which costs a heavy percentage of the cash takings. Some hospitals would record only the net profit. If the full cash takings were placed on one side of the account and the cost of the entertainment on the other, the true state of affairs would be plain to those who have every right to know. The writer thinks that the Income and Expenditure account should at least show in full all cash received and all cash paid.

The present form of accounts, however, is insisted on by at least one of the Central Hospital Funds, and therefore the institutions concerned cannot hazard their grant by departing from it, and it must be employed until a better system is generally adopted and accepted by the Funds and the whole of the London Hospitals.

From the published income and expenditure account is drawn a figure which is called the "cost per occupied bed." In discussing Hospital affairs, the cost per occupied bed is often used for illustration, and the cost under each heading of expenditure is separately quoted, although it is generally misleading when employed in comparing the expenditure of one hospital with that of another. This figure is perhaps useful, if always prepared in the same way, to check increasing expendi-

ture at one hospital, but there are so many circumstances, which vary at different hospitals, having an effect upon the cost per occupied bed, that before making comparisons the published expenditure of every department should be closely scrutinised. For example, in the matter of provisions, one hospital keeps separate accounts for the hospital and the nursing home. Another hospital masses the accounts together, and, of course, shows a larger cost under this heading.

In the section headed "Surgery and Dispensary" is included mineral waters. One hospital has extensive plant for the manufacture of its own mineral waters, but does not make any provision in the accounts for depreciation of the machinery or interest on the original outlay. Another hospital will find it more economical to buy supplies from the manufacturer. Under the same heading comes Museum. One hospital will bear the whole cost of the chemicals required for its pathological department; another will have the cost met by a research department with separate accounts.

Under the heading "Domestic"—some of the larger institutions have their own laundry, but do not debit the expenditure account with an allowance for depreciation of machinery or interest on capital.

Under Establishment Charges: Some institutions receiving cases of a more chronic character than others, undertake a large proportion of the decoration of the interior of the building and employ convalescent patients, thus showing a smaller outlay on annual cleaning.

Rent is, of course, very much higher in some cases than in others, and nothing is shown of the annual loss of income caused by the sinking of funds in real estate.

Administration would be increased if cost of raising money were fairly shown instead of only publishing the net result of an entertainment, bazaar, etc., on the income side of the statement.

There is also an almost universal tendency for "Administration:—Management, Official Salaries" to bubble over into "Other Salaries and Wages" under "Maintenance:—Salaries, Wages, etc."

In fact, under almost every heading there are so many things which cannot properly be stated in an account which is only a record of the manner in which cash payments of the year have been made, and until some better system has been generally adopted the practice of comparing different hospitals by the cost per occupied bed can only be misleading, and very often cause people without technical knowledge to form wrong impressions. Thus arises injury to some of the institutions concerned.

As the figure under discussion is formed by taking the ordinary expenditure of the year, and deducting therefrom a

certain allowance for the treatment of out-patients, and then dividing the whole by the average daily number of beds occupied, the question of extraordinary expenditure being no factor in the matter, it is obvious that by a little manipulation in placing some part of the cost of renewal of furniture, repairs, cleaning, &c., under extraordinary expenditure, it not being always easy to differentiate between ordinary and extraordinary under these headings, the figures can be increased or decreased without anybody but a keen critic being much the wiser.

The amount deducted on account of out-patients can only be obtained by taking the approximate cost, which amount has to receive the sanction of the Hospital Sunday Fund, and in addition there are half-a-dozen methods of numbering out-patients. Here, too, there is an element of uncertainty which should not be included in the preparation of figures upon which is based the award from a central fund, or which are used for purposes of comparison in endeavouring to obtain the good-will of the benevolent public.

ANNUAL REPORT.

With the accounts, the subscribers naturally require a report from the Board of Management on the way in which the affairs of the hospital have been conducted during the year. This report, which has generally to be presented to an annual meeting, should contain in a concise form all information to which those who provide the funds are entitled. To prevent confusion and to provide a record which can be referred to in the future it is as well that the report should only concern itself with events which have occurred during the period of twelve months under review, preferably the twelve months covered by the accounts which accompany it.

It is fair, also, that a clear statement be presented to the public of the property held by the hospital for the endowment fund and for any other funds connected with the work, and that mention should always be made of contributions to those funds such as real estate or stock, which do not appear in the cash statement, as the Governors are entitled to a fuller account of the financial position of the institution than is obtainable from the income and expenditure account.

A list of contributors must be supplied, and it is advisable that only the names of such and not the addresses be given, as the report often gets into the hands of those who are raising funds for other purposes, and consequently charitable persons are troubled with extra petitions for assistance which would not have been received had their addresses been withheld. This solicitude for the comfort of the contributors is not the only reason for the last recommendation, for it is well-known

that the number of persons who give to charities is strictly limited, and the greater number of charities assisted the smaller the amount received by each.

CLOSING OF BEDS.

The time arrives, unfortunately, in the history of most hospitals when it is found that not only does the income fall short of the expenditure, but that borrowing powers are exhausted. Then only one expedient presents itself, and that is curtailing the work. Some hospitals have preferred to run at full pressure and to get heavily into debt with their tradesmen and in respect of local rates, and in at least one instance some of the furniture has been seized in respect of the demands of the rate collector. Although this is, no doubt, an excellent advertisement for the hospital, it is one which very few Boards of Management would care to venture upon, therefore the question of curtailing the work must be considered well in advance of when the actual time arrives, for the officials concerned must be given fair notice to discontinue their agreements, and arrangements for discharging the patients affected cannot be carried out in a few days.

In a large hospital the closing of one ward of perhaps twenty beds makes very little difference to the total expenditure as the salaries saved are only those of perhaps one sister and three or four nurses, their food and the food of a few patients. If the expedient is resorted to it must be on a scale which affects more than twenty patients and half-a-dozen nurses and servants. If, say, a quarter of the institution is closed, it may be found possible to dispense temporarily with a resident medical officer, an assistant matron or a home sister, a stoker, a porter, several scrubbers or wardmaids, and perhaps other persons whose services would still have been needed in the event of only a few beds being closed. The only department, in fact, which would not be affected is that of the secretary, for at this time, more than any other, appeals must be issued to the charitable, and full advantage taken of the distressing situation.

SUNDRY UNCLASSIFIED MATTERS.

DISPLAYED RULES.—Persons passing a notice displayed on a wall rarely read it, except at the first sight, and grow so familiar with it that they hardly remark its presence. Of course, there is a certain value still, as none could make the excuse that the notice had not been seen. The object, however, is not to catch offenders, but to ensure good conduct. Notices should, therefore, be kept clean and intact; it is even a good plan to

have several copies struck off in different-coloured inks, and to change the card from time to time for another with the same wording but of different appearance; it will be read anew by all passers.

COURTESY TO PATIENTS.—It should be impressed upon all servants of the hospital that uniform kindness must be shown to the patients and their friends. These persons are nearly always distressed in mind, and their trouble must not be increased by incivility or unsympathetic treatment.

STOCKTAKING.—The entire contents of each ward and department should be periodically checked against an inventory. By these means the breaking of, damage to, or loss of an article will be brought to the notice of the management. The inventory will also be useful in the event of a fire.

GUARANTEE OF FIDELITY OF OFFICERS.—All officers who handle money should provide a guarantee. A policy of one of the Guarantee societies will be ample protection. If the hospital pays the premium it should be the Secretary's duty to review the rates from year to year and endeavour to get them reduced where possible.

THE HOSPITAL OF THE FUTURE.

Present methods of management may seem perfect and likely to answer all purposes admirably, but new contingencies arrive from time to time which call for new methods.

Therefore, a hospital must not shut itself in its shell and refuse to notice what is going on in the outside world. To do so would be "as if a ship captain should sail to India from the port of London; and having brought a chart of the Thames on deck at his first setting out, should obstinately use no other for the whole voyage."

The hospitals need to keep constantly in touch one with the other, and for this purpose some central organization would be of immense advantage. The King Edward's Hospital Fund for London has already done much in this direction, and perhaps, in time, it will form this Central Board—perhaps it will be formed independently of any existing organization.

Co-operation is the watchword of the future, and what incalculable efficiency and economy it is capable of bringing about! What a pity it is to see half-a-dozen large hospitals almost jostling each other in a small area and all keeping sternly aloof as if their interests were not identical. In a dozen ways they might combine and produce economies which would enable them to extend their efforts.

Appeals generally utter a cry which should touch the hearts of the generous. It is that there is not enough support to fill present needs, let alone to carry out much needed extension. This can mean but one thing which is that with more money more lives could be prolonged or saved. If this be true a wrong is being done by not setting to work to procure the additional funds, and if economy can bring them, every day that it is not observed increases the wrong. Economy in comparatively small matters is capable of being immediately brought about, but it is nothing to the economy that can be effected by co-operation.

It seems ridiculously plain that if tradesmen were asked to contract for the supply of goods to 20 hospitals much more competition would arise and more advantageous terms be quoted than if they tendered for one only.*

It is generally found that for one hospital to undertake its laundry work is unprofitable; would this be found so with half a dozen situated close together? Difficulties may be put forward, but difficulties present themselves in any enterprise. Each hospital would have to put in so much capital and engage not to withdraw it or their work from the amalgamation without ample notice and possibly a forfeit. Each hospital would supply a representative or representatives to the Committee managing the concern. A step in this direction has been taken already by one large London hospital undertaking the washing of another.

To a larger amalgamation, the Central Board, referred to above, would fall the great question of pensions which has never been properly grappled with because the hospital system is like no other system—as all the separate establishments are working on their own lines. A servant who during his working years is employed by several institutions finds himself at the end without sufficient grounds to expect an adequate pension from his last employ. Nothing but co-operation can meet such a difficulty.

Occasion might arise, if it has not already arisen, when concerted action is needed to contest a legal decision adversely affecting hospital interests in general. One hospital might not be justified in spending its funds in this way—a number could join together, with little individual cost, in appealing. Here would a Central Board be able to do work which could not easily be done by anyone else.

In numberless ways could such an undertaking contribute to the economical management of an efficient voluntary hospital.

* NOTE.—It must also be remembered that persons who deal with Hospitals know that their accounts will be paid. In general trading, prices must be adapted to include the contingency of bad debts. Therefore, the custom of Hospitals is particularly desirable and should attract much competition and low prices.

SUMMARY.

	PAGE
INTRODUCTORY - - - - -	5
Alternative methods of dealing with subject. Size of hospital described.	
CONSTITUTION - - - - -	5
<i>Objects.</i> Primary object. Other objects. Benefactors' interests.	
<i>Incorporation.</i> Advantages. Different forms. Cost.	
THE MANAGEMENT - - - - -	7
<i>The Board.</i> Professional members. Representation of honorary staff.	
<i>The Chairman.</i> Bearing of his personality on choice of staff.	
<i>The Treasurer.</i>	
<i>The Staff.</i> Scheme of duties.	
<i>Representative of Board and Director.</i>	
<i>The Honorary Staff.</i>	
<i>The Chaplain.</i> Might be provided by neighbouring church. Patients with different creeds. Special fund for chaplain's department.	
<i>The Registrar.</i> Might also do electrical work.	
<i>The Pathologist.</i>	
<i>The Secretary.</i> An assistant secretary. Secretary's qualifications. Duties.	
<i>The Matron.</i> An assistant matron or home sister. Matron's qualifications. Charge of kitchen and stores, assisted by a housekeeper. Matron's staff and duties.	
<i>Senior Resident Medical Officer.</i> Duties and staff.	
<i>The Auditors.</i>	
<i>The Sanitary Officer.</i>	
INCOME AND INVESTMENTS - - - - -	10
<i>Endowment.</i> Endowment fund proper distinguished from accumulated savings. Powers of Charity Commission. Investments. Borrowing powers. Separate accounts for special funds.	
<i>Income-Tax.</i>	
<i>Subscriptions.</i> Their value.	
<i>Donations.</i> How to retain interest of donors.	
<i>Commission.</i>	
<i>Legacies.</i>	
<i>Advertising.</i> Value and methods.	
<i>Income from Central Funds.</i>	
<i>Payments by Patients.</i>	
<i>Loans.</i> Overdrafts. Interest.	

	PAGE
THE PATIENTS - - - - -	13
Financial suitability. Enquiry Officer or Almoner. Choice of patients. Medical suitability. Letter system. Patients' payments. Numbering of patients.	
THE BUILDING - - - - -	14
<i>Drainage.</i> Installation and upkeep. Disinfectants. Examinations.	
<i>Ventilation.</i> Modern forms. Cleanliness. Change of air.	
<i>Lighting and Cooking Apparatus.</i> Electric light. Lighting not illumination. Gas fittings retained. Testing of electric installation. Inflammable shades and decorations. Interest and deterioration. Danger of electricity. Storage. Power. Cost. Cooking apparatus. Gas-rings.	
<i>Water Supply.</i> Drinking water. Storage. Filters. Waste. Lifts. Carbonate of lime deposits. Water softening. Exhaust steam.	
<i>Fire Protection.</i> Apparatus. Storage of Water. Pressure. Pails. Inspection and drills. First duties. Turning off gas. Turning off electricity. Duties after fire is extinguished. Sand for fires caused by electricity.	
<i>Chimney Cleaning.</i>	
<i>Disinfection.</i>	
<i>Heating and Hot Water.</i> Economy in coal.	
<i>Refuse Destructor.</i>	
<i>Dust Removal.</i>	
<i>Works Department.</i> Its limits. Window cleaning. Flushing of drains. Telephones. Lighting. Plumbing.	
<i>Painting and Cleaning.</i>	
<i>Telephones.</i>	
<i>Insurance.</i> Fire insurance Boiler insurance.	
<i>Lifts.</i>	
<i>Laundry.</i>	
<i>General Upkeep of Building and Plant.</i>	
ORDINARY EXPENDITURE - - - - -	21
<i>Purchase of Supplies.</i> Tenders and contracts. Tabulation of tenders. Periods of contracts. Comparison of prices with other hospitals. Standard of milk. Foreign and English meat. Fish—London or Grimsby. Bread. Vegetables. Ice. Mineral waters—purchase or manufacture. Drugs. Dressings and bandages.	
<i>Distribution of Stores.</i> Economy. Lady housekeeper who should be a trained nurse. System of requisitions. Books. Carving of meat. Bread. Milk sterilising and storage. Officers' food. Dripping and kitchen waste. Difficulty of separate accounts for staff and patients. Food for staff.	
<i>Hardware, Crockery, Brushes, and Cleaning Materials.</i> Crockery—marked or unmarked. Enamelled iron articles. Brushes. Polished floors. Soap.	

Ordinary Expenditure—*continued*.

PAGE

Linen, etc. Books. Stock-taking and inspection.*Coal and Coke.* Bins. Mixture. Cinder sifting.*Surgical Stores.* Surgeons' requirements. Water-beds.

India-rubber articles. Regulation for use.

Drugs. Returns of issues to doctors. Proprietary articles.

Chloroform. Steel wine.

*Instruments.**Washing.* Cost of own laundry. Cost of sending out.

Allowance to officers. Joint laundries.

Salaries, Wages, Emoluments and Holidays. Effect of plan of buildings. Holidays. Advantages for staff.

Training. Nursing Institute.

RENT, RATES AND TAXES	-	-	-	-	-	-	-	-	29
Purchase of land.	Should hospitals pay rates?	Income tax.	Tax on male servants.						

ACCOUNTS	-	-	-	-	-	-	-	-	30
The "Uniform System"	—its unreliability.	"Cost per occupied bed."							

ANNUAL REPORT	-	-	-	-	-	-	-	-	32
The report of the Board.	Special funds.	Gifts of real estate.	Published list of investments.	Addresses of subscribers.					

CLOSING OF BEDS	-	-	-	-	-	-	-	-	33
Considered well in advance.	Scale of closing.								

SUNDRY UNCLASSIFIED MATTERS	-	-	-	-	-	-	-	-	33
Displayed rules.	Courtesy to patients.	Stocktaking.	Guarantee of fidelity of officers.						

THE HOSPITAL OF THE FUTURE	-	-	-	-	-	-	-	-	34
Co-operation.	Joint laundries.	Combination for purchase of goods.	Pensions.	Joint legal action.					

APPENDICES	-	-	-	-	-	-	-	-	40
I.	Form comparing tenders.								
II.	Requisition form for use in wards.								

APPENDIX I.

FISH.

REQUIREMENTS.	PRESENT PRICES.
About $260 \times \frac{3}{4}$ lb. diets weekly—cod, plaice, haddock, rock, salmon, etc., to be dressed, cut, and cleaned for table - - - -	$1\frac{1}{2}$ d. per diet.
2 doz. weekly dried haddocks (3 lb.) each - -	6d. each.
6 doz. weekly kippers or bloaters—	
Bloaters - - - -	2d. per pair.
Kippers - - - -	1s. per doz.
Ice $3\frac{1}{2}$ cwt. weekly in summer - - - -	} 2s. per cwt.
„ $1\frac{1}{2}$ cwt. „ winter - - - -	

CONTRACTOR.		COST OF 6 MONTHS' SUPPLY.	COST OF 12 MONTHS' SUPPLY.
		£ s. d.	£ s. d.
Present contract	-	82 11 0	165 2 0
A. B. & Co.	- -	No tender.	155 13 6
B. C. & Co.	- -	102 9 8	201 14 4
C. D. & Co.	- -	107 18 0	210 18 6
E. & Co.	- - -	117 0 0	No tender.
F. G. & Co.	- -	133 9 4	262 12 0
H. & Co.	- -	140 8 0	No tender.
I. & Co.	- - -	174 9 5	328 13 8
K. & Co.	- - -	174 9 6	345 3 2

DIETS REQUIRED FOR THE PATIENTS.

190

[illegible]

Motto :—Dum spiro spero.

THE ECONOMICAL MANAGEMENT OF AN EFFICIENT VOLUNTARY HOSPITAL,

BY

ERNEST WILLIAM MORRIS.

WITHIN the last few years much deeper interest than heretofore has been taken in the treatment of the sick poor and the voluntary Hospitals have recently occupied public attention as to their management and administration. The public are, as a rule, well disposed towards Hospitals and support them magnificently ; nevertheless, the feeling exists that the Hospitals are somewhat extravagantly managed ; officials have been charged with showing a lack of ordinary business methods and it has been said that money, so generously subscribed has not always been spent to the best advantage.

Perhaps, on the whole, these criticisms have done good in spite of the obvious danger of the Hospital boards being influenced thereby into thinking that cheapness in itself was meretorious.

How do those who charge the Hospitals with extravagance come to the conclusion that a Hospital is expensively managed ? In only one way, namely, by comparing the cost of one Hospital with that of another. The total ordinary expenditure per annum of a Hospital is taken and this sum is divided by the number of beds occupied ; a quotient is arrived at and this is called "the cost per bed" of that particular Hospital. Then the cost per bed of various Hospitals is compared ; that which has the lowest is taken to be right and those which have higher are condemned more or less vigorously for expensive management.

Now this "cost per bed" comparison is misleading to those who do not thoroughly understand Hospital work. True, the low figure *may* be due to good management but it does not in the least follow that it is so.

The comparison is wrong for this reason, that the word "Hospital," being a word of wide application, is used for

institutions which are not doing the same kind of work and are not intended to do the same kind of work.

Moreover, to the question "What is efficient management?" many answers may be given. There is no standard of efficiency and those who know most about Hospital work will be the last to attempt to fix a standard. These know, better than the public, that medical science is progressing so rapidly that what is "efficient" to-day, may be culpably "inefficient" to-morrow.

To illustrate. Until within the last few years all Hospitals treated the terrible disease of Lupus by the rough method of surgical scraping. As this was then the only means available for treating this disease, all Hospitals were, to the best of their knowledge, efficient. Then Finsen came and worked and published to the world the discovery of the Light Cure. Those Hospitals which were governed by keen and progressive Boards at once fitted up a Finsen Light Department; such a department would immediately raise the "cost per bed." This is only one instance, many of which might be given; and by this instance may also be seen the danger referred to above, namely, that the public may press so urgently for a low "cost per bed" that progress in medical science may be hindered, unless the Board is strong enough to be willing to sacrifice a certain amount of popularity.

It is necessary to draw attention to the very varied work which Hospitals are doing. It is all good work, but it is not all equally costly work.

For instance, one Hospital makes it its aim to receive certain patients who are sick, to heal them if possible and finally to return them to the community well or relieved. This is a most commendable aim and it is a splendid work; but it is not very costly work and it must be noted that these Hospitals are enabled to do it as cheaply as they do because other Hospitals have expended much in investigation and research. All Hospitals have now their Finsen Lamps, but it was a few pioneer Hospitals which bore the chief expense in finding out what were the best lamps to use.

But some other Hospitals have a somewhat loftier aim and take a broader view of their duties than those just referred to. They are not content with simply returning their patients cured or relieved. They not only attempt to cure the disease from which the patient is suffering, but they wish to investigate that disease, to trace it to its cause, to discover what favours it, what destroys it. The aim of these Hospitals is higher; so of necessity is their "cost per bed." One is attempting to destroy the disease in the patient, the other is also trying to eradicate the disease from the community altogether, to stamp it out of existence; just as tubercular disease of all kinds is being stamped out by those Hospitals which are energetic

enough and independent enough to establish an Opsonic Department. These Hospitals must have their Bacteriological Laboratories, Clinical Laboratories, Pathological Laboratories, Physiological Laboratories, Sterilizing Rooms, &c., &c. All these adjuncts to research require a large staff and expensive material. It will be one of *these* Hospitals which will give to the world one of these days the discovery of the cause of cancer.

And here one may draw attention to a statement which is often made, namely, that the work of the cheap Hospital must be as good as that of an expensive Hospital because the "death rate" of both is the same. Now it is a curious fact that the death rate at most Hospitals is about one in ten of the patients admitted, but perhaps from what has been said above it will be seen that the death rate is not the only test or measure of a Hospital's work; the condition of the ninety per cent. who do not die would perhaps be a better test, if taken say, five years after they left the Hospital. I will go further and say that the hundreds of happy people who never have to go to a Hospital at all, may actually owe their good fortune in this respect to the good work which these Hospitals are doing in discovering and spreading the principles of Hygiene.

Further, the comparison between the various Hospitals by the "cost per bed" method is misleading in that some of them are much more than houses for the cure of sick people, more than establishments for the investigation of disease; they are also schools whereat the future Physicians and Surgeons of this country are being trained for their life work. It may be said that to train medical men is no part of a Hospital's work. But we would ask, where else can they be trained if not at the Hospitals? It is true that those Hospitals which have schools attached are more costly than those without, although the increase in expenditure is not wholly due to the presence of the Students, but largely to the energetic policy of the Board which has attracted the Students.

There is yet one other reason which has made it misleading to compare the cost of the Hospitals in the way mentioned. This is, that there is no standard as to the degree of "brotherliness" with which the sick and injured poor should be treated. Hospital Boards have different views on this matter. Some, perhaps,—one hopes they are few—would regard the sick poor man as little more than a damaged machine, to be mended as cheaply and as quickly as possible; such a Board, if it carried out its views logically, would dispense with the services of a Chaplain; change of diet would be considered unnecessary; flowers in the wards, an extravagance; expenses of cleaning, of lighting, of nursing would be reduced to a minimum. There may be other Hospital Boards who go to the opposite extreme and may treat patients in a way which, coming from the homes some of them do, may not be entirely

appreciated. Somewhere between these extremes is the right line to take, and the King's Fund in comparing the expenditure of the most important London Hospitals in all their departments has been of very great service to the various Boards in their attempt to decide where this line should be drawn.

But while it may not be advantageous for the public to compare one Hospital with another, the comparison by a Hospital's officials of that Hospital's expenditure at different times is one of the most important duties of those officials who are anxious to prevent waste.

There are two things to be borne in mind in controlling expenditure:—Firstly, the method of buying must be sound; to insure this is not very difficult; secondly, the methods adopted to prevent waste must be sound; the devising and carrying out of these methods is extremely difficult.

The whole question of Hospital economy lies in a keen appreciation of the importance of these two points.

It is proposed to deal with the question of buying first and with the much more important question of prevention of waste afterwards.

I.—HOSPITAL BUYING.

PROVISIONS.

Meat.—This like all other provisions must be bought by tender; tenders should be issued every six months; it is advisable that certain members of the Board should form a Sub-Committee—a Steward's Committee—who should act with the Steward as advisers in deciding this and other contracts for provisions. Firms wishing to compete should be approved by the Committee before being allowed to do so; it is quite sufficient to allow four or five firms of good standing to compete; open contracts cause waste of time in correspondence and in examination of samples. The meat most suitable for a Hospital is:—

(A) For Patients:—

Best American refrigerated beef; thick flank; rounds; middle ribs: shins and lean beef for beef-tea; kidney suet.

Best New Zealand mutton: legs and mutton chops.

(B) For Officers, Nurses and Servants:—

As for patients, but with the addition of fresh pork, fresh veal, New Zealand lamb.

The tender forms must state that the meat is to be delivered as required every morning early, and should include the usual terms to be signed by the contractor, namely, that the buyer may cancel the agreement if the goods are unsatisfactory, and may purchase elsewhere, charging the contractor with the cost.

The delivery each day should be checked, of course, by the Steward or Storekeeper as to weight and quality. It may be pointed out that a stone of butcher's meat weighs eight pounds, not fourteen.

Fish.—This, too, must be bought by tender. The fish most suitable for Hospital use are plaice, fresh haddock, turbot, brill and lemon sole. The tender form should state that the fish is to be delivered daily as required; that heads, tails, roe and offal are to be removed and that the fish is to be cleaned ready for cooking. The same penalty for unsatisfactory delivery must be imposed as for meat, *and this applies to all contracts for provisions.*

Poultry.—Chickens are the only poultry used in the Hospital. The tender form should specify that the fowls should weigh about two pounds each, when trussed and ready for cooking; liver, heart and gizzard should be removed. Hospitals which cater for Jewish patients will have to make a second contract for meat and poultry, *i.e.*, for Kosher meat and Kosher fowls. These are more expensive than the ordinary.

Bread and Flour.—The Tender form should state that the bread should be of the best wheaten flour, well baked and made into loaves weighing about a pound and a quarter each; it must be perfectly cold before delivery. The flour should be the best wheaten and the best Vienna self-raising. Bread will of course be delivery daily.

Grocery.—This form includes tenders for rice, tapioca, sago, arrowroot, sugar (loaf, Demerara and castor), pearl barley, coffee, corn flour and all other grocery requirements for the doctors, nurses and patients.

Vegetables.—Those used in Hospitals are potatoes, carrots, onions, turnips and greens. Tender forms should state that the vegetables must be clean and free from dirt, that the greens should have the stalks and outside leaves removed and should be free from undue moisture.

SURGERY AND DISPENSARY.

Drugs, Dressings, Chemicals, Wines and Spirits.—These should be bought by half-yearly contracts from approved firms by the Drug Committee, a Committee composed of members of the weekly Board and of the Medical and Surgical staff of the Hospital. Samples should be delivered a fortnight before the Committee sits, to enable the Chief Dispenser to analyse or carefully examine them, that he may be in a position to advise the Committee. Drugs and chemicals are much more subject to market variations than provisions and the advice of the Chief Dispenser should be followed if he suggests the postponement of certain purchases.

Instruments and Surgical Appliances.—These are not purchased by tender, as a rule. They are usually required

suddenly, singly, and often have to be specially made. If a new operating theatre were to be fitted up, then the instruments would be supplied by contract.

DOMESTIC.

Furniture, Bedding, Linen, Hardware, Crockery, Soap, Coal, Uniforms, etc.—These should be bought by half-yearly contracts. Soap should be bought to sample. All samples of soap should be carefully examined for the percentage of water they contain; it will often be found that the cheapest is by no means the least costly. Tenders for steam and for house coal should state the name of the colliery. The prices for coal are affected by the Hospital's storage capacity. Most Hospitals, unfortunately, must have the coal delivered daily.

STATIONERY.

This should be bought by annual contract. Each department should provide the Secretary, Steward or other official with a sample of each book and printed form used and the numbers likely to be required. Stationery is stored by the Steward and given out to the departments once a week on written orders being given.

The above seem to be the most important points to be noted in buying. We now come to the more serious question, namely, the best methods for the prevention of waste.

II.—PREVENTION OF WASTE.

That this is the more important part of the work of the officials will appear when it is noted that to buy well is useless if stores are frittered away by lax systems in the Hospital itself. One must be continually checking a tendency towards extravagance which will creep into the Hospital, as it will into any institution in which some hundreds of people are at work and where individual carelessness can be so easily overlooked. Luxuries become conveniences and conveniences necessities.

CHECKING WASTE IN PROVISIONS.

A system which very much affects the expenditure in provisions should be mentioned first, namely, that most Hospitals have what is known as a diet table; this is a table of various diets which are intended to meet the requirements of patients in different illnesses and in different stages of their illness. These diets are revised by the Medical Staff periodically, about every five years, and it is most important that the Steward should sit on these revising committees. Few medical men, few men of any profession, are familiar with the *cost* of food, and consequently the diets are drawn up without regard to

cost. On the advice of an expert, such as the Steward ought to be in the price of foods, the cost of a diet may often be lessened by some slight modification *without in any way depreciating its value as a food*; the difference of a penny in the cost of a diet per day will amount to some hundreds of pounds a year in our large Hospitals with their five or six hundred occupied beds.

The following is a sample of a diet sheet :—

DIET TABLE.

HOSPITAL.

* MILK DIET :—Milk, 1 pint (A) ; or 2 pints (B) ; or 3 pints (C) ; or 4 pints (D).

† DIET No. 1 :—(A) Bread, 8 oz. ; fried or boiled fish, 10 oz. ; milk, 1 pint ; pudding ; green vegetables at discretion. For supper, soup, or half pint of milk, or cocoa, or porridge, or gruel.
(B) is as (A) but with an extra pint of milk or one egg.

‡ DIET No. 2 :—(A) Bread, 10 oz. ; potatoes, 8 oz. ; cooked meat, 4 oz. ; milk 1 pint ; pudding ; green vegetables. For supper, as in Diet No. 1.
(B) is as (A) but with an extra pint of milk or one egg.

§ DIET No. 3 :—Bread, 12 oz. ; potatoes, 8 oz. ; meat, 6 oz. ; milk, 1 pint ; pudding ; green vegetables. For supper, as in Diet No. 1.

|| DIET No. 4 :—Bread, 10 oz. ; potatoes, 8 oz. ; meat, 6 oz. or fish, 10 oz. ; cooked bacon, 4 oz. ; milk, 2 pints ; pudding, green vegetables. (Jews are allowed 2 eggs instead of bacon.) For supper as in diet No. 1.

EXTRAS ALLOWED.—The following extras may be added to the diets if it is felt that the patient's condition requires them : Beef tea, or mutton broth ; extra eggs or milk ; chicken ; rabbit ; bacon ; fruit ; ale or stout ; cream ; beefsteak ; mince ; wines or spirits. All orders for extras lapse on Wednesdays—DIET DAY—and will not be served unless re-ordered by the doctor. Orders for wines and spirits must be renewed every three days.

BY ORDER.

It will be noticed that at the end of the Diet Table is a list of extras which the Staff are allowed to order for cases which

* Milk costs about 9d. per gallon.

† This diet costs about 4½d.

‡ This diet costs about 4¾d.

§ This diet costs about 5¾d.

|| This diet costs about 8½d.

require some further feeding than is provided by the regular diets. This is the usual arrangement at most Hospitals. It is these extras which are the source of much leakage unless carefully watched. It is so very natural for a kind-hearted resident doctor to put a poor patient on bacon or chicken on request, because No. so-and-so has bacon or chicken. Moreover, in the rush of Hospital work, it is likely to happen that a patient who is on an "extra" will continue to have it long after he really needs it, the result of oversight on the part of the doctor, who is not, as a rule, present in the wards during meal times. Therefore the necessity for the rule that these extras lapse automatically. The secretary should visit the wards on diet day with a view to noting whether the rule has been complied with. It may be said that the doctors err, not from intention, but from pure oversight: it is right to explain to the staff what is the value of each of the diets and of the extras, and I have invariably found them most ready to co-operate in reducing unnecessary expenditure in this direction.

Each ward should keep a diet book which should be written up every evening by the sister in charge. This is a summary of the particulars as to diets on each of the patient's prescription papers hanging at the bed head. These ward diet books should be delivered to the steward every morning and the requirements analysed by him and entered into a book known as the "Steward's Diet Book." This book serves two purposes, it is the guide to the chef as to the amount of beef, mutton, chicken, vegetables, etc. which he is to cook and deliver to the wards (he is allowed 31 to 37 per cent. loss on meat in cooking), also to the storekeeper as to the amount of bread, milk, beer, etc. which he is to serve out. From this book, too, the steward compiles his weekly diet return; this should show at a glance the cost of each ward in diets and in diet extras.

It is more economical for the dinners to be carved by expert carvers in the kitchen and delivered to the wards in hot water tins; they are then served on to the patients' plates from the hot water tins in the ward itself. It is more economical for two reasons, first, the carving itself is performed with less waste than if performed by ward sisters, and secondly, the bones, if they have never entered the ward, can be used for making stock; bones *returned* from a ward can only be thrown away. It is a mistake for nurses in the wards to give large slices of bread to patients; it is generally left and is then wasted.

There are many provisions which must be supplied to the ward which are not included in the diets, such for instance as tea, coffee, butter, sugar, arrowroot, etc. These should be ordered by the ward sisters from the storekeeper on slip-forms. These orders are filed and once a week are entered by the steward into the "Steward's Provision Book"; and from this

the weekly cost of each ward, of the Resident's House, of the Nurses' Home and of the servants, in provisions not included in the official diets, can be obtained.

In considering the expenditure of Hospitals on "provisions," we are on the borders of a subject, which, although it does not strictly come within the scope of this paper, should be just mentioned. I refer to the question—"to what extent should a Hospital be a hotel as well"? At the time when most of our larger Hospitals were founded, the sick and destitute came to them probably as much for their destitution as their sickness; the hospitals stood with open doors to receive all that were distressed. But if one notes the patients who now-a-days occupy a hospital ward, one cannot but notice that they are not all, at any rate, the destitute beings whom the founders had in view. The mechanic is there, the clerk, the governess, the shop assistant, even the shop-keeper. I am not saying that they should not be there; under certain circumstances it is quite right that they should be there. All of these can, and no doubt do, pay the doctor for all ordinary ailments; but when it comes to the necessity for surgical operation and expert surgical advice, or nursing through a long and tedious illness, such as typhoid, then there is nothing they can do but to go to a Hospital and get help. But if the patient is not quite of the class for whom the Hospital was originally intended, ought the conditions of his admission to be the same? A mechanic in full work sends his wife to the Hospital for nursing through a long illness—nursing which he cannot possibly give; the Hospital gladly comes to his aid and gives it; but should the Hospital be expected to give free board as well? A man meets with an accident and comes into the Hospital; his employers continue his pay, as is often the case; he also receives payment equal to his wages from his sick club. Of course the secretary can approach him afterwards for a subscription, but that is quite another matter, and moreover every secretary has discovered that—

"When the Devil was ill, the Devil a Saint would be;
When the Devil was well, the devil a Saint was he."

But it is not merely a question of paying or not paying a subscription, it is a question of paying for what he has received, so far as he can afford it; he should be a subscriber as well. The whole question of the gratuitous treatment of the partly poor is ripe for consideration and is urgent; but there are many sides to the question, and it cannot be settled in a day. Those who work in the Hospitals love the old-fashioned charity, openhanded and unquestioning:—

"O Charity, all patiently
Abiding wrack and scaith.
O Faith, that meets ten thousand cheats,
Yet drops no jot of faith."

And yet Charity may be all the truer Charity if it discriminates a little. Probably, however, the greatest opposition to any change in existing methods would come from Hospital officials themselves, especially from the medical staff.

Referring to the Provisions again for a moment, the King's Fund has compared the cost per bed per annum of the sixteen Hospitals in London having more than one hundred beds each. Provisions cost each of these Hospitals £28 1s. 6d. per bed, on an average.

We now come to the—

CHECKING OF WASTE IN THE DISPENSARY.

Drugs and Chemicals:—Every Hospital has its own Pharmacopœia; this is a book containing formulæ of repeatedly-ordered mixtures, pills, liniments, etc. It is intended to save the Physician's time in prescribing; instead of having to write out a long prescription for each patient, he simply orders the mixture by the name it is known in the Hospital Pharmacopœia; the Dispenser will understand and dispense accordingly. This book is analogous to the Diet Table in the Steward's Department, except that in this case the formulæ run to some hundreds.

These formulæ, like the Diet Tables, are revised periodically, and it is the duty of the Chief Dispenser to be of service to the revising Committee and advise as to the *cost* of the formulæ suggested, and also, and this is very important, as to the *keeping* properties of the mixtures; important because most out-patients take away medicine for a week at each visit. Care in respect to both of these points will save the Hospital some hundreds of pounds a year.

I should like to say very emphatically that the more of its medicines a Hospital makes, and the fewer it buys, the more it will save; it is cheaper for the Hospital to buy crude roots, barks, leaves and seeds and with them make its own tinctures and infusions, ointments, lozenges and tablets.

Every dispenser knows the tendency of young doctors to try all sorts of advertised remedies; this tendency should be checked. If the doctor does not know the formula of some patent medicine he is ordering, he has no right to prescribe it. If he does know the formula he should write it so that it may be dispensed in the ordinary way in the Dispensary. As a matter of fact he should be allowed to prescribe only—

- (A) Medicines described in the British Pharmacopœia.
- (B) Medicines described in the special Pharmacopœia of the Hospital.
- (C) Medicines described in a list, revised quarterly by the Staff, of newly-discovered remedies.

It may happen that certain commonly-used medicines rise at times to a fabulous price. The Chief Dispenser must report

this and it may be necessary to withdraw that drug from use on a plea of *non possumus* until the price has fallen. Notice of such withdrawal should be sent to each member of the Staff at once.

A cause of waste in the Out-patient Department is that patients sometimes have to attend for weeks, if not months, and gradually their prescription books accumulate quite a long list of various medicines; pills are ordered one week, liniment is added another, lotion another, then a gargle; the temptation of the young doctor, to save time in wading through pages of back prescriptions, is to put *rep: omnia*, and let the dispenser do the searching, under the impression that the patient will say what he wants. The patient always wants *omnia*; once having had a gargle he will always have it. This custom must not be allowed. We have seen a patient walk off with 23s. worth of medicine. The rule should be insisted upon that the doctor must write down exactly what he wishes the patient to have at each visit, and dispensers must be authorised to refuse any other kind of order.

Another possible leakage in the dispensary which must be guarded against is the tendency of dispensers to give too large a quantity to Out-patients; the temptation is to give patients a few *extra* cough lozenges, a little *extra* liniment, because "the doctor said I might rub my arm as well as my leg, and take a lozenge whenever I liked." The dispenser knows quite well that he did not say so, but to save long discussion gives the extra. Dispensers must dispense exactly what is *written* and no more; if the prescription says the lozenges *ter die sumendi*, he must count 21 and no more. The trouble is that these tendencies *grow*, unless they are constantly checked, and if, at a Hospital where the Out-patient attendances run into hundreds of thousands, every patient is given a little extra for the sake of peace—a £2,000 drug account will jump to £3,000 for no apparent reason.

It is not the place here to discuss the question as to whether the more well-to-do Out-patients should not contribute to the cost of their medicines. Many, who could afford an outside doctor, come to the Hospital with a view of getting expert advice for which they cannot afford to pay. That is right, but could not they afford to pay for the medicine prescribed? It is sufficient here to note that at some of the best known Hospitals a charge is made to those who can afford it; and it should also be noted that it is not the *universal* custom to give medicines to Out-patients at all; advice is given, but not medicine.

With regard to the medicines sent to the wards for In-patients, the very natural tendency of the dispensers is to send too large a quantity of each prescription ordered, specially if the prescription is somewhat difficult to dispense. In the wards patients are seen daily and medicines are repeatedly

changed; small supplies, therefore, should be sent, or the waste in a large Hospital through medicines being thrown down the sink will be enormous.

There will be other things required from the dispensary by the wards than the patients' prescriptions, just as more is required from the Steward than diets—such, for instance, as stock bottles of various lotions, turpentine, stock ointments, glycerine, etc. These should be ordered by the sister of each ward in an order book day by day, and from these order books the dispenser writes up his returns for the “dispensary sundries” supplied to each ward week by week.

Dressings and Bandages.—It is not necessary to dwell with any detail upon the special pitfalls into which, with a mistaken notion of economy, a Chief Dispenser is likely to fall in buying dressings; suffice it to say, that in dressings, almost more than in anything else, the lowest-priced is not the most economical; bandages may be bought so cheaply and be so common that a dresser *uses two or three instead of one*, and they can be so flimsy as not to stand washing, and can therefore be used once only; a good bandage can be washed and used two or three times. A cheap lint will run six or seven yards to the pound, one costing 50 per cent. more will run to double the length, Gauzes, bought in hundred-yards lengths, are quoted at most alluring prices, and may be so light in weight that the dresser uses ten thicknesses instead of five. Against all this sort of thing the wise dispenser will be very much on his guard at contract time.

As to the Out-patient Department, not much in the form of dressings is used; lint, boric lint and bandages are the most important items. It used to be the custom to keep a pile of lint on the dispensary counter already cut, and, whenever lint was ordered on a prescription, a piece of this lint was given; the dispenser with a long line of patients waiting at his window, had no time to make enquires as to how much was likely to be required. Now, lint is kept ready cut, as before, but in *three* sizes; (A) is a piece only a few inches square. (B) is larger, and (C) is the largest and is about 18 inches square. The Surgeon on ordering lint for a patient he has examined must state whether (A), (B), or (C) is to be given. This of course refers to dressings which the patient has to apply at home.

With boric lint, the temptation of the makers is to overload the lint with boric acid, 40 per cent. being usually added. This is because boric acid is much cheaper than lint. It is more economical to use plain lint and prescribe it with boric lotion, which can be easily made by the patient himself if given a little boric acid powder with instructions.

As to bandages, it has already been shown that cheap, thin bandages are wasteful; nevertheless a cheaper bandage than is used in the wards should be used in the Out-patient Depart-

ment, because Out-patients can never be depended upon to wash their bandages, therefore they need not be of that fine quality which is necessary to withstand repeated washing.

Coming to the In-patients, all dressings are ordered daily for each ward from the Dispensary (in the same way as are all other ward requirements), and from these the Dispenser prepares his weekly Dressing Summary.

One word as to the Dispenser's Store-rooms. Everything delivered from the manufacturers must be entered in, although it must not be put away into stock until examined and passed by the Chief Dispenser himself; also nothing must be allowed to leave the stores unless a voucher is received. The wards are not the only department which require articles from the Dispensary; some are charged to the Nurses' Home; some to the Out-patient Dressing Rooms; some to the Casualty Department, and so on. It is very important that what goes to in-patients should be accounted for apart from that which goes to out-patients. In some Hospitals this is easy, because there are two separate dispensaries for in- and out-patients respectively, both served from one dispensary store; but if there are not two Dispensaries, an attempt should be made to keep the accounts separate by having two sets of bottles and drawers arranged on opposite sides of the Dispensary.

Instruments.—Orders for instruments are sent at irregular intervals. As new instruments are constantly being invented, requests from surgeons are made from time to time; if the instrument is of no great value, the order is written in the surgeon's order book, and this book (and all other order books) are sent from the various departments every week to the Secretary to be examined by him, and laid before the Board. If the required instrument is of greater value than £5, the order must be initialled by four surgeons; this rule is intended to check the too ready ordering of every instrument that is put upon the market. The "life" of surgical instruments is much longer if they are carefully looked after, it is wisest to make one man responsible for certain cabinets of instruments, and of these an inventory must be taken periodically. It is surprising how few instruments are lost even in a very large Hospital by making the individual responsible; it is important that the name of the Hospital is clearly stamped upon each instrument, the chance of loss by theft being by this rule reduced to a minimum. It pays a large Hospital to have a skilled instrument mechanic in its employ; he is responsible for all sharpening and minor repairs, he should examine all instruments after use in the Theatres, he should overhaul all instruments allowed in the wards as stock, at least once a week, and see that they are kept thoroughly efficient. By this means it is insured that no mishaps occur during an operation through a faulty instrument.

WINES AND SPIRITS.—These, in most Hospitals, are bought, stored and distributed by the Chief Dispenser; they are contracted for at the same time as the drugs. They are supplied to the wards on daily orders from the Sisters, the order giving the name of the prescriber as well as that of the ward, should the ward be visited by more than one member of the Staff. All orders for stimulants should lapse every three days. From the Sister's orders the Chief Dispenser draws up his weekly wine and spirit returns.

In London, the average amount of the expenses connected with the Surgery and Dispensary is £15 7s. 1d. per bed per annum, as has been shown by the King's Fund; this figure does not take the out-patients into consideration; they consume three quarters of the drugs and chemicals.

DOMESTIC EXPENSES.

Renewal of Furniture.—Nothing need be said on this except that the cost must be charged to each ward and department concerned so that strict supervision may be kept.

Bedding and Linen.—Usually bought by tender through the Matron. The expenses under this heading are largely affected, not only by the number of beds occupied, but also by the number of patients the Hospital puts through each of its beds per annum; this number varies at different Hospitals from 12 to 20, and is certainly a point to be borne in mind when the "cost per bed" is discussed. The expenditure in bedding and linen is also affected by what one may call the "standard of cleanliness" which the Hospital adopts. This is by no means the same at all Hospitals. We have seen sheets in use at one Hospital which would not be tolerated at another. The following is a fair allowance of bedding for each bed at a general hospital: eight sheets, four draw sheets, four blankets, six pillow cases, two feather pillows, two counter-panes. It is of course important that an exact inventory of the bedding of each ward and room (also of the furniture and crockery) should be taken periodically; once in six months is the rule at some Hospitals.

Hardware and Crockery.—This is bought by sample by tender by the Steward. Orders from the Wards, Nurses' Home, Residents' House and Out-patient Department for replacement of breakages must be sent in a proper Order-book to the Store-keeper once a week. The order should be initialled by the Matron, who would have made enquiries from the Sister as to whether the breakage was unavoidable. If the Matron is of opinion that the breakage was through carelessness, the Nurse responsible must pay one quarter the cost of the article. The damaged article to be replaced must always be produced. This rule would very much lessen the

breakages. The cost of each ward and department in hard ware and crockery should be summarised weekly.

Washing.—It pays a large Hospital of, say 500 beds, to have its own laundry. Where careful accounts have been kept, it was found that about 45,000 pieces a week could be washed at a cost of about £90, which includes the cost of depreciation of machinery and interest on the building. The account for a week may be of interest:—

Salaries and wages for week	...	...	£40	9	11
Food (dinners, luncheons, milk)	...	...	13	13	6
Materials—Yellow soap, 240 lbs.; washing powder, 640 lbs.; soda, 7 cwt.; starch, 110 lbs.; borax, 10½ lbs.; blue, 3 lbs.; turpentine, 1 gal.; disinfectants	...	...	9	12	10½
Electric light and power	...	...	3	5	2
Coal for boilers	...	...	16	7	6
Water	...	...	1	15	6
Interest on outlay; depreciation, say	...	...	5	0	0
Total	...	...	£90	4	7½

CLEANING AND CHANDLERY.

The expenditure in this direction must depend upon the Hospital's "standard of cleanliness," and upon the traffic in the corridors and wards. If the Staff visit in the morning, which is not the rule in London, the cleaning can be done in the afternoon; if the Staff visit in the afternoon, the cleaning in some Hospitals has to be done at night; it cannot be done in the morning, because the wards and corridors are then crowded by students and by porters with their trollies distributing stores. Night cleaning is more expensive, both because a charwoman working at night must be paid a higher wage than a day woman, and also because it is necessary to employ artificial light. The scrubbers should be under supervision of a sister or housekeeper who would give out to each her supply of soap, soda, etc. This sister would obtain her supply from the stores as the ward sisters do, therefore the cost of cleaning, when once the standard has been fixed, can be checked and kept stationary. As a Hospital is the meeting-place of all the sick and dirty people of the neighbourhood, we would advise that the standard of cleanliness should be a very high one, certainly much higher than is usually adopted for an ordinary dwelling house.

FUEL AND LIGHTING.

The amount of coal consumed will largely depend upon the system of heating in vogue. If by hot water pipes it will be less than if by open fire places. Most Hospitals are warmed by both systems, the wards by one and the corridors by another.

The amount of coal consumed in the furnaces for the boilers must be carefully recorded day by day; in our opinion no automatic stoker can be compared with a good man who knows his work. The difference in the amount of coal used by a good and bad stoker is astonishing, and, as a rule, the very fact that the consumption is being carefully watched makes the bad stoker try to improve. As to that part of the Hospital which is heated by fires, the amount of coal and coke conveyed to each ward must be noted and careful firing encouraged.

LIGHTING.

To save waste in this department of a Hospital's expenditure unceasing watchfulness is necessary. In going round the wards at night note must be taken of any lights left burning unnecessarily in corridors, rooms, lavatories and sculleries. Attention must be always drawn to a light wasting and trouble must be taken to discover the culpable person. A look-out should be kept for sterilisers left boiling with the gas high.

ESTABLISHMENT CHARGES.

This includes the cost of annual cleaning, repairs, rates and taxes, &c. With regard to the rates it is not necessary to say very much. It is noticeable how very differently the various Hospitals are treated by the assessing authorities. One wonders on what grounds an institution which exists for the benefit of the community, without any gain to itself, and which serves the public by keeping its poorer members out of the infirmaries and in restoring bread-winners to their work as soon as possible, should be rated at all. With regard to the cleaning and repairs, the expenses will largely depend upon the age of the building and its general shape. We are of opinion that for a "large" Hospital it pays to keep a staff of mechanics to do its own repairs. These men—engineers, plumbers, carpenters, painters—should be under supervision of the Hospital Surveyor. The Surveyor should present to the Secretary weekly the value of the work done in each ward and department; these particulars are obtained from his weekly wages-book.

SALARIES AND WAGES.

Salaries Medical.—The amount which comes under this heading in the accounts of the different Hospitals seems to be a very variable one. As a rule, Hospitals pay some small honorarium to the staff who have to do the hard and wearisome work of the Out-Patient Department. As £100 a year is about the maximum paid to any one man, and he has to come to the Hospital on three or four days in the week and spend several hours at each visit in the reeking air of a crowded waiting-room, the Secretary is hardly likely to make any attempt to reduce this expenditure.

Salaries Dispensing.—These largely depend upon the size of the Out-patient Department. At one Hospital with which we are acquainted, three-fourths of the dispensers could be discharged were there no Out-patient Department. It is not advisable to cut down Dispensers' salaries by employing unqualified men; every man should have passed the minor examination of the Pharmaceutical Society. Neither should their numbers be reduced to the barest minimum. Their work is too responsible for Hospital authorities to run risks in letting the men rush their work, and if a mistake is made the result may be fatal.

Salaries Nursing.—The usual proportion of patients to nurses at a busy general Hospital is about three patients to one nurse; not that a nurse has only three patients to attend to, for the nurses are never all on duty at once; there is the day staff and the night staff. Moreover, the nurses who work in the Out-Patient Department and do not work in the wards at all, and the nurses who are away on leave, all tend to make the proportion higher than three to one. The salaries paid vary from £18 to £50 a year. We certainly should not recommend any reduction in this expenditure, for we do not think that the charitable subscribers to our Hospitals wish that the arduous, responsible, and self-sacrificing work of a nurse should receive less remuneration than of a good cook.

Other Salaries and Wages.—This heading includes the salaries of porters, clerks, servants, and all those not included in the above (except administrative salaries, *i.e.*, the Secretary and his assistants).

Here, as in other departments, continual watchfulness is needed to see that labour is not wasted. It is extremely difficult to gauge the requirements of a busy Hospital as to the number of porters to employ; the work varies so much in its pressure on different days and at different times in a day.

We have now reviewed what appear to be the chief causes of waste in a Hospital and the best methods of correcting them. It should be stated that the various weekly summaries of the different departments should be sent to the Secretary, and by him entered into a "Weekly Grand Summary." This summary should be so ruled as to show at a glance the following figures and facts :—

Diet returns for each Ward; for the Doctors, the Nurses, for the Servants.

Provision sundries return for each Ward; for the Doctors, the Nurses, for the Servants.

Hardware and crockery for each Ward; for the Doctors, the Nurses, for the Servants.

Dressings to each Ward and to Out-patients.

Wines and spirits to each member of the Staff, and to each Ward.

Drugs and chemicals to In and Out-patients.
 Dispensary sundries to each Ward and to Out-patients.
 Weekly consumption of gas.
 Weekly consumption of electricity for lights.
 Weekly consumption of electricity for motors.
 Coal consumption for boilers and for each Ward.
 Servants' wages.
 Porters' wages.
 Mechanics' wages for each department.
 Number of patients resident, Surgical and Medical.

It seems that the whole secret of keeping down the expenses of a Hospital lies in nothing else than in never-resting watchfulness, on the part of the Secretary, who has a bird's eye view of all the departments under him, and on the part of the heads of departments who loyally co-operate in checking the tendency of extravagance. There is no royal road to the happy achievement of a balance on the right side.

In this paper we have confined ourselves to dealing with the management of Hospitals as they are, and not as they may be eventually. There are many questions of inter-Hospital politics which are now being more or less seriously considered. The most important of these questions may just be mentioned :—

- (1) The question of the payment of the Medical and Surgical Staff of the Hospitals.

This has been put forward on the plea that by such an arrangement the governing Board would have more control than it now has, and could enforce economy, which it cannot now do. We think the argument is not sound. It has been our invariable experience that the Staff are most anxious to co-operate in all possible ways in the reduction of unnecessary expenditure, and it is a poor compliment to these gentlemen to infer that they would be more loyal to the Hospital if paid than if not. Again, how would the Hospitals raise the extra money to pay these gentlemen? Most of our surgeons obtain £50 or £150 for a private operation, and will come to the Hospital and perform ten or twelve a week gratuitously. What sort of payment could any Hospital offer such men? And if the Hospitals could manage to get this extra money, would not the payment be ten times more than any economy that might thereby be effected? And would the Hospitals continue to carry their high prestige and draw the first men in the world to their help?

- (2) The question of a Central Buying Office (but not distributing).

This would be a distinct advantage in that it would

end the present anomaly of twenty expert chemists and twenty expert stewards all examining the same kinds of samples at twenty Hospitals at contract time. Hospitals might send a list of their requirements, with samples, if necessary, to a central office; tenders would be sent with samples to the same office by the dealers, and one chemist and one Steward could buy for all. No particular equipment is necessary for such an arrangement and it could be probably managed from one of the present Offices of the Hospital Funds.

(3) The question of State Aid.

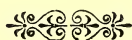
It is to be hoped that the day when Hospitals are helped by the State is a long way off if thereby the Hospitals become bound hand and foot in red tape; there must be a certain sympathetic liberty allowed for the best research work. It should be remembered, however, that the Hospitals do now receive a certain amount of State Aid in the return of their Income Tax, and we should welcome any extension of such an arrangement if the Hospitals were still left free from paralysing interference.

(4) The question of the payment by patients for board.

This has been referred to in the Paper.

(5) The restriction of the numbers of in and out-patients.

This question is particularly to the fore just at present. The custom of giving to Subscribers "Letters" in exchange for their Subscriptions is open to so much abuse that in our opinion it should be abolished; for, although the system is hedged about with all sorts of protections theoretically, it practically means that Subscribers buy the help of the Hospital. But although this arrangement is in our opinion a wrong one it is difficult to suggest a better. Many proposals have been made. One is that the Hospitals should only treat emergencies and that all other cases should be sent to the Hospital by an outside practitioner. This is obviously open to grave objection, for in this event Hospitals would become private Nursing Institutions for the local general practitioners. Possibly some system of amalgamation with the Provident Dispensaries might be arranged.



SUMMARY.

INTRODUCTION	- - - - -	43
Interest recently taken in Hospital Management.		
Fallacy of "cost of bed" comparison, because all the		
Hospitals are not doing the same kind of work.		
There is no Standard of Efficiency.		
NECESSITY OF THE OFFICIALS OF A HOSPITAL COMPARING THE		
COST OF THAT HOSPITAL AT DIFFERENT TIMES	- - -	46
ECONOMICAL MANAGEMENT DEPENDS UPON	- - -	46
(1) Sound buying.		
(2) Prevention of waste.		
NOTES ON BUYING IN THE DIFFERENT DEPARTMENTS	- -	46
NOTES ON THE PREVENTION OF WASTE IN THE DIFFERENT		
DEPARTMENTS	- - - - -	48
CONCLUSION	- - - - -	60
(1) Payment of Staff.		
(2) Central Buying Office.		
(3) State Aid.		
(4) Payment by Patients.		
(5) Restriction of Patients.		